A Centre of Excellence: a Tribute to Tradition or an Attempt to Follow the Rules?

A Case Study of the Aquaculture Protein Centre, Norway

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Master Thesis
European Master of Higher Education

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Abstract

The focus of this study is to explore the phenomenon of the Centres of Excellence in the higher education context. The starting point of the work is the abundant rhetoric on the role of higher education in modern society, its aims and functions. The environment in which European universities operate forces universities to change their core practices and routine activities, imposes challenges and calls for immediate actions. On the other hand, the European university is a sufficiently traditional setting, which has long preserved rules and norms that may come in conflict with modern developments. Based on these views, the study offers an in-depth review of two theoretical models: a modern entrepreneurial model, rooted in the New Public Management practices and a traditional European model, which highlights the importance of Humboldtian ideals. Further the analysis of the case, the Aquaculture Protein Centre, is conducted according to the aforementioned theoretical frameworks, using the core dimensions of organisational structure, leadership, culture, and external links. For the purpose of the study qualitative methods that comprise of interviews, document review and simple participant observation, were used.

The comparative discussion draws the conclusions that even though some core academic values and characteristics of the organization can be attributed to the traditional university model, many characteristics indicate the entrepreneurial behaviour inherent to some members of organisation and a shift from traditional features namely collegiality, the notion of knowledge for its own sake, and significance of academic networks, to those dictated by the modern developments of the New Public Management ideas.

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Zhanna Saidenova

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Abbreviations

APC	Aquaculture Protein Centre
CoE	Centre of Excellence
EEA	European Economic Area
EHEA	European Higher Education Area
ERA	European Research Area
EU	European Union
FIP	Feed Ingredients and Processing
GH	Gut and Health
HEI	Higher Education Institution
HEIs	Higher Education Institutions
NPM	New Public Management
NVH	Norwegian School of Veterinary Science
PAM	Protein and Amino Acid Metabolism
R&D	Research and Development
RCN	Research Council of Norway
SFI	Centre for Research-driven Innovation
UDF	Norwegian Ministry of Education and Research
UK	United Kingdom
UMB	University of Life Sciences
USA	United States of America

1 Introduction

1.1 Background of the Study

The systems of higher education all over the world have experienced serious changes in the environment during recent decades. They have gone through a period of considerable extension, which transformed them from institutions of the elite to the mass universities of today. The massification brought many issues, such as limited funding opportunities, questions of governance, and the rise of the stakeholder society (de Boer & Goedegebuure, 2003).

What adds to the complexity is the continued globalization of markets, resources and information which require radical rethinking of the way institutions, companies and organizations are performing their tasks. Universities are playing a very important role in this transformation but at the same time they have to bear enormous responsibility for innovation in all areas of their activity. Despite the fact that the implications of similar trends can be perceived differently in different institutions or different countries (Currie & Vidovich in Tight, 2009), the main challenges remain the same.

The European context has its own specificities. Until the early 1980s a relatively unified understanding of the modern university's social and cultural relevance vs. economic relevance to the society prevailed (Santiago, Carvalho & Relva, 2008). Science was protected from the market and political interference and was supported on the disciplinary basis (ibid). However, higher education's traditional functions and roles started to be questioned in the early 1980s in the emerging context of New Public Management (NPM) and market ideologies. The debate has been going on for decades now and still there is no common view on how the university should function to be able to cope with the more complex roles demanded of it.

Modernisation of the European university, concerning its interlinked role in education, research and innovation, has been acknowledged as a core condition for a move towards an increasingly global and knowledge-based economy, according to the Communication 2003/58 (European Commission, 2003). The above mentioned Communication also claims that the European university is lagging behind its successful counterpart – the American university. It

continues by stating that the European university is not in a position to achieve its potential in a number of significant ways (ibid). Using the crisis rhetoric, a number of authors have proposed that the university needs a new model which doubts the Humboldtian ideal of a community of autonomous professors and emphasizes leadership, management and entrepreneurship more than academic freedom, internal democracy, and the organizing role of academic disciplines (Olsen & Maassen, 2007). In other words, the trend towards deeper marketisation of higher education in Europe is rather obvious.

Since universities are closely linked to the society and the state, it is no surprise that they have to respond to the environmental changes. The modern university needs to strive to reach different goals which might as well be in conflict with each other. There is no doubt that the transformation of the European university into the engine of economical development and creator of the knowledge-based society (economy)[*] will affect its values. The higher education institution (HEI) must now combine teaching and research as well as tasks of economic development, which questions its original core characteristics. Concerning these challenges Hazelkorn (2004) fairly underlines that there is a problem of becoming too concerned with competitiveness and implementation of market mechanisms at the expense of academic freedom of inquiry and fundamental educational goals.

It is against this background that the search for the new European university should be viewed. Nowadays the university finds itself on a crossroad balancing between two extreme missions: the university as an organisation characterized by a desire for knowledge and Mertonian values (**C**ommunism, **U**niversalism, **D**isinterestedness and **O**rganized **S**cepticism, CUDOS) or the business enterprise driven by the values of business (Enders, 2002:85).

All these changes, shifts and challenges have certain implications on the organisational dynamics of the European university and the ways of organizing research and teaching activities within its walls. This is the starting point of this study. Furthermore, the work will investigate such organizational structure of the modern university as a Centre of Excellence. It is a sufficiently new element of the HEI in Europe but a dynamically developing one. They exist as “Top Technology Institutes” in Netherlands, “Research Centres” in the UK, “Poles” in Belgium, “Research Centres” in France or as “Centres of Excellence” (CoE) in Sweden,

[*] Many observers note the dominance of economical over societal discourse of the role of higher education in Europe. It is suggested that it may affect the civic and democratic climate of Europe.

Finland and Norway (Larédo, 2003). However, as Laredo also observed, there have only been limited research efforts to clarify the activities and dynamics of such organizations. They are being created as a response to the changing international and global environment, fulfilling the national research goals while remaining very competitive and entrepreneurial at the same time. It is the aim of this research to investigate goals and processes of such centres and interpret them through the framework of the modern European university which finds itself on the crossroads at the moment. The study will attempt to analyse if the CoEs are created to secure internal core processes and classical values of the university as an elitist, excellent unit or, on the other hand, they are established due to the demand for further marketisation and improved efficiency of higher education.

1.2 Establishing the Context: the Case of Norway

Norway has followed the main European trend of the expansion of the higher education system: the number of students attending higher education institutions between 1980 and the early 1990s has almost doubled from 73,856 to 162,168 (Statistisk sentralbyrå, 1992). The number is continuing to grow reaching 214,490 in 2008 (Statistisk sentralbyrå, 2009). The participation rate is considered to be relatively high in comparison to other countries. Such a rapid expansion has brought up such issues as the quality of teaching and research, autonomy of the universities and colleges, and mobility of students and staff. Moreover, these issues become even more important in the context of fulfilling the Bologna requirements on the way to the common European Higher Education Area (EHEA) and growing international competition and cooperation. Closely linked to these questions is the Norwegian Quality Reform, which emphasizes increased autonomy of HEIs, new funding mechanisms for institutions, new forms of students' evaluation, assessment and feedback, and increased priority given to participation in international programmes and exchange agreements.

As for the research activities and organization in Norway, there are seven universities, six specialized universities and 25 university colleges. The higher education sector is accountable for about a quarter of all R&D activities in Norway. However, it is only universities and specialised universities that have been given a special responsibility for the long-term basic research and research training. These areas of the research activities are considered to be a priority. It is reflected in the Report No. 20 (Norwegian research Council, 1995), which identifies the main areas of the research intended to meet the crucial need of society and

nation. The key dimensions are: increased allocations to basic research, increased research funding (up to 3% of GDP), and enhanced internationalisation of research. To ensure that these tasks are being fulfilled, the Government delegates responsibilities to the Research Council of Norway.

The Research Council of Norway (RCN) was established in 1993 and since then has been a strategic agency for Norwegian research under the direction of the Ministry of Education and Research (UDF). While its funds are primarily allocated by the UDF, other Ministries that have special research priorities (like the Ministry of Petroleum and Energy) also contribute. The RCN then grants the funds to various research projects and programmes on the basis of competition. In other words, the organisation is a buffer unit between the government and the grants recipients, or the state has created a quasi-market for research. However, the council does not provide full financing of the projects which obliges the research organisations, universities included, to diversify their funding base. Allocations to the HE sector for R&D have been increasing throughout the years, and the growth in the funds that the RCN has provided during the period of 1995–2005 accounted for almost 6% (Lehmann & Jacobsson, 2008). It proves that the universities play a significant role in the overall research policy of Norway.

RCN also focuses on the international projects and participation of Norway in various international research activities including non-European regions of the world. The European Union (EU), however, remains the main partner of Norway when it comes to research. RCN coordinates many projects within the European Research Area (ERA) and European Economic Area (EEA) frameworks. Due to the cooperation, Norwegian researchers have participated in about 10% of all research projects within the EU and this number continues to grow (Norges forskningsråd, 2007).

On the national level the RCN encourages the excellence in research by establishing Centres of Excellence. The Research Council provides basic funding for 21 CoEs that have a responsibility to conduct high quality research attracting the best personnel from all over the world. While the program has proven to be very effective overall, the midway evaluation reports have, however, revealed some problems with the organisation of such centres. The centres are mainly hosted by the universities, but independent firms can also apply for funding. One of the main requirements for the applying institution is that it must ensure a

strong administration of the projects and ability for effective self-evaluation (Norges forskningsråd, 2005). In return, it gets a high degree of professional and administrative autonomy. This programme proves the significance of the excellent research in the area of international cooperation. It also suggests that universities should adjust to the changing environment and organise their activities in a different way, emphasising quality research and elitism in the basic research units. In Larédo's (2003) words, it is an attempt to find a new approach to what is called "the third sector" – to keep the aims of the public sector while employing more private sector methods and techniques which requires specific developments for university research.

1.3 Motivation and Rationale

The changing international environment dictates new conditions for the activities of HEIs. Research is increasingly seen as one of the priority areas which can ensure international success as well as satisfy societal needs on the national level. Universities are often seen as the conductors of such research which means more pressure and responsibility for them while trying to add to stakeholders' welfare. The emerging market forces and the encouragement of the business-like behaviour make the situation for the universities even more complicated. The university finds itself in the situation which Husén (in Rinne & Koivula, 2005) has depicted with the phrase "Agora Contra Acropolis" – the metaphor referring to the market square and the hill that rises above everything else. In short, the situation is dual and complex, and universities must strive to adjust to the new conditions rather quickly so as not to lose the ability to compete on both the national and international arenas.

The European university has long been characterized by the model of Humboldt, with an emphasis on autonomy, freedom of knowledge, teaching, and research. Therefore, many researchers underline the difficulty of applying market techniques to the higher education sector in many European countries. However, the university can be described as an open system which interacts with the environment and possesses unique adaptability. One of the changes that has not been paid much attention to is the organisational developments of the university, namely the creation of basic research units where research staff are not expected to meet simultaneous teaching commitments, or "Centres of Excellence".

The Centres of Excellence have not existed for long but are a growing trend across Europe. It is an extremely interesting object of study since its establishment may mean a new direction of the organisational development of the European university – its new identity. They combine a genuine pursuit for knowledge by performing basic research with modern leadership and management activities; they attract the best researchers, being elitist in this sense, and clearly divide research from teaching; they are significant on the national research agenda but at the same time they try to be more international and cooperate with different regions of the world. The study of the CoE might uncover valuable transformations of the European university and attempt to prove that the traditional model is having modifications due to the environmental challenges. These reasons make the work highly interesting and rather novel, not to mention that this field has not attracted much research attention yet.

The Aquaculture Protein Centre (APC) has been chosen because it is one of the first centres to acquire funding from the RCN. It is a consortium of the Norwegian School of Veterinary Science (NVH), The Norwegian University of Life Sciences (UMB) and Nofima Marine. Since it is a joint venture, it will be possible to examine the levels of cooperation between the members as well as the links with the industry. The APC is conveniently hosted by the UMB which means the university has to ensure its organisation, administration, and governance procedures. Therefore, it will also be possible to examine the CoE in a broader context of the university and its links and relationships with the Centre.

1.4 Aim, Research Problem and Questions

In the European context an abundant rhetoric on efficiency, effectiveness, quality, excellence, internationalisation, and competition (Reed, 2002) makes attempts to push HEIs towards an entrepreneurial and pro-market "environment" where institutional behaviour is supposed to be corporate and business-like. Economic and utilitarian dimensions have become overvalued in research policies and less attention is paid to cultural and social needs of the research (Santiago, Carvalho & Relva, 2008). However, as many scholars have pointed out, the HEIs are extremely resistant to change and tend to employ new behaviour on the surface while their initial practices stay the same on the "shop floor" level. Hence, the universities are seeking for ways to adjust to the complexity and duality of the environment, to secure their core values: critical inquiry, disinterested science, intellectual freedom, and the commitment to truthful knowledge (Scott, 2003). In doing so they organise their research and teaching activities in a

new manner in order to satisfy the stakeholders' claims. One of the organisational units of such transformation is the CoE. The emergence of the CoE can be understood as a revitalisation of the core values of the Humboldtian university as well as the sign of a more hierarchical university with an emphasis on quality, efficiency, results, and strong leadership. Therefore, the aim of the research is to deeper understand the goals and processes of the CoE as a unit within a modern European university, its priorities, functions and developing dynamics.

The main problem of the study is formulated in the following way:

“How can emerging Centres of Excellence be interpreted and understood within the European university?”

The general research problem is elaborated upon using the guiding research questions:

1. *What are the relevant frameworks for understanding the establishment of Centres of Excellence?*
2. *What main features do the social and academic organisation and leadership of Centres of Excellence have?*
3. *Do Centres of Excellence represent new ways of organising academic activities within the university?*

2 Theoretical Framework

Universities as any other organisation do not and cannot exist in a vacuum. They have to interact with the environment in order to achieve their main goals. Universities, being open organisations, are influenced by the developments of the external world; they can also affect institutional behaviour themselves. Similarly, the Centres of Excellence as newly developed organisational units of the universities bear the same characteristics and also have to interact with the environment. The CoE which is the focus of this study is a result of the initiative of universities; it employs mainly university academics and researchers. Therefore, the work is based on the *assumption* that the CoE is considered as part of the activities of the university and consequently, it can be analysed through the theoretical models presented below. The two contesting views on the modern university's transformation will be discussed: market-based/New Public Management approach and views on the traditional European university rooted in a Humboldtian tradition.

The models are purely ideal and based on the literature review. It is understood that on practice their implementation can fluctuate from the perfect models but main characteristics are assumed to be present in the CoE under study.

2.1 The Emergence of Centres of Excellence

Several higher education researchers (Bleiklie, Larédo, Byrkjeflot et al.) have suggested that a concept of knowledge and research has acquired a new emphasis in the context of HEIs. The shift from “knowledge as a process” to “knowledge as an outcome” has been noticeable in many HE systems all over the world. It is being pushed by, among other things, the concern of the authorities with the efficiency instead of traditional “cultural mission” of the academic institutions. Traditional academic values are transformed into values associated with the economic enterprise and consumerism, underpinning such truly academic concepts as quality and excellence (Bleiklie & Byrkjeflot, 2002).

Furthermore, growing globalisation and internationalisation mean that the majority of disciplines and the knowledge production are increasingly relying on international networks while most academics are identifying themselves even more with the international communities, networks and institutions. Although comparisons with the business sector and

firms have certain shortcomings, one can say that modern universities face the same trends as the business sector which makes them define their core competences, concentrate their efforts on them, and to enter into long term relationships with other institutions. It is no surprise nowadays that a university calls itself a learning organisation (a term borrowed from the business sector), entrepreneurial institution, or a corporate university. These trends show the changing role of the university for society, research, and knowledge production. In the search for new methods of organising its activities the public sector, higher education included, has turned to the business field where the emphasis is on efficiency, demand, and the needs of the customer. It is from this sector that the term "Centre of Excellence" originates. In the business literature the CoE is usually described as a small unit specialized in a very narrow number of activities. They are, as a rule, organised on an "ad-hoc" basis, create cutting-edge technologies and resources, may or may not be located in one place, and specialise at preserving and maintaining "state of the art" status (Surlemont, 1998; Moore & Birkinshaw, 1998). In such units group members can quickly learn from one another, tap into opportunities in multiple markets, and quickly combine their resources, which some of the less internationally-oriented firms cannot afford. The Centres are supposed to create competitive advantage and make the company as a whole more efficient and profitable.

As for the academic environment, the concept of CoE started emerging in the USA and Canada towards the end of the 1970s (Bell, 1996). Due to the massification and rapidly changing focus of higher education towards the market, governments tried to encourage higher education institutions to create and develop links with the other actors, including industries. Translated from business into academic language, the Centre of Excellence does not seem such a new and unique form of organising research. It refers to the model of research that has a long history at the universities (Bell, 1996). The model can be described as an internal university research centre which is created to facilitate networking between groups of scholars in one or more departments and/or universities who are already teaching in or researching similar fields. Initially such centres were not linked to the applied commercial research and were not obliged to extensively develop their external links. They were a part of the university and followed its strategy. Later, however, following the processes of further massification, internationalisation and globalisation; the centres were encouraged to improve university-industry relations, seek external grants and opportunities, and engage into commercial research.

In Europe this process has been slower due to the tradition of the state's overall support for higher education and lack of market powers. Nowadays the programmes rewarding the entrepreneurial behaviour of the universities exist not only on the European level but also on the state level. In the not so numerous literature on the CoEs they are mainly viewed through the framework that emphasises research as a collective endeavour, mixing heterogeneous actors, capacities and competences. Usually they are regarded as successful spin-offs of a university or a cooperation of universities, which are striving for excellence in research in a highly specialised area of study. In other words, they are viewed from the outside disregarding the processes that take place inside the centres themselves. Limited research has been done to clarify the dynamics and development of such centres, and it often does not go beyond the stereotyped well-known positions. It usually emphasises the role of the university in creating the CoEs and their impact on developing international links, conducting research, and creating a status of an excellent university. It is often forgotten that in its very core the CoE refers to a model of organisation research that has been long exercised at the university. So, while they are considered to be very modern, they do bear characteristics of the traditional research work at the university such as small administration apparatus, devotion to basic research and creating new knowledge, small student groups, and collaborative work with the colleagues from other institutions or even countries.

In the existing literature on Centres of Excellence prevails a one-sided view on them as a new way of organising research at universities, which can also assist in attracting resources and speed up the process of technology transfer. On the other hand, some authors suggest that CoEs are practically organised around the activities that have been conducted by the HEIs for centuries. Therefore, in order to obtain a systematic view of the organisation under question, two frameworks can be used. The first emphasises the CoE as a purely entrepreneurial unit where market plays an important role, while the second explains the functioning of the organisation from the angle of the traditional European university as we know it. The terminology used to describe the models presupposes that *learning university* and *entrepreneurial university* are interchangeable notions referring to the market-oriented model, influenced by NPM developments. Kristensen (1999), for example, suggested that when applied to the university, these concepts equally describe the ongoing changes due to the development of market-based approaches in public sector. In that sense the author of the work agrees with the article.

Furthermore, the *classical European university* and *the traditional European university* are also interchangeable and bear characteristics of the continental European model with the strong influence of Humboldt's ideas. Using the two frameworks we shall be able to take into account somehow contradicting views and fill in the gap of limited research on the internal processes of the Centres of Excellence.

2.2 New Public Management (Market-based Approach) as a New Development Paradigm

In recent years there has been an extensive amount of literature dealing with the impacts of new managerialism, or New Public Management, on the organisation and management of public sector services (universities included) in the European welfare states. It is a concept which is used to refer to ideas about changes in the way that state funded institutions are managed as a result of the widespread restructuring of welfare services in the Western world (Ferlie et al. in Deem, 2001). It is tightly connected to the rise of the Evaluative State (Neave, 1998) which meant rationalisation and redistribution of functions between governments and higher education institutions while the government maintains overall strategic control (de Boer & Goedegebuure, 2003). Undoubtedly, the shift to another way of governmental intervention has brought changes to the ways public institutions operated; new managerial practices emerged. So, new managerialism appeared as a response to marketisation, accountability pressures, decreased state funding, and massification processes.

The concept of new managerialism refers to ideologies about the application of techniques, processes, values, and practices coming from the private sector to the management of public institutions as well as to the actual use of those techniques and practices in the organisations concerned with the provision of public services (Deem, 2001). But as some researchers have observed, NPM is more a set of ideological assumptions about how institutions should be run, than a well developed strategy of how they are actually managed (Meek, 2003). NPM is based on a very inclusive ideological foundation of market populism. It means that any social or organisational change can be legitimised in terms of the assumed market impeccability as a universal solution to all social problems (Reed, 2002). Hence, the ideology of market-based managerialism would be spread across the public sector as an institutional norm which would diminish the role of professional bureaucracy so inherent to the higher education institutions.

The promoters of the new managerialist discourses often insist that the ideas of new managerialism are based purely on a search for *effectiveness, efficiency,* and *excellence* where a continuous organisational improvement is the norm. New managerialism makes an accent on desirability of different organisational changes. The main initiative that NPM facilitated in terms of organisational structure was the deconstruction of bureaucratic hierarchies into the networks of purchasers and providers (Meek, 2003). A consistent emphasis is put on the detailed monitoring and evaluation of quality standards in the day-to-day activities while the customer's demands have to be regarded as paramount. Following Keating and Shand (in Meek, 2003: 9), we can summarise the core features of the NPM:

- A constant emphasis on results concerning efficiency, effectiveness, quality of service, and what the intended beneficiaries actually gain.
- Decentralised management environment that matches authority and responsibility better. That will allow for the decisions on resource allocation and service delivery to be made closer to the point of delivery; that will also provide scope for feedback from clients to other interested groups.
- A greater focus on provision for a client's choice through the creation of competitive environments within the public sector organisations and non-governmental competitors.
- The flexibility to explore more cost-effective alternatives to direct public provision or regulation, including the use of market instruments such as vouchers, sale of property rights and patents etc.
- Accountability for results and for establishing due process rather than a compliance with a particular set of rules, and a change from risk avoidance to risk management.

But as suggested by Reed (2002), public sector professionals, managers, and administrators cannot become innovative, market-driven, self-motivated entrepreneurs overnight; their occupational ideologies have to be ingrained in the new discourses and practices. Therefore, cultural re-engineering is needed. Linked to the cultural changes is the concept of academic capitalism. Obviously, changes in work practices for academics in general are different from changes of organisational forms and management practices. Slaughter and Leslie (1997) note attempts to transmit new values to academics – the values that are usually found in the business sector. This might mean undertaking commercial research for industries instead of the “pure” or “basic” research for the government-funded research councils. Slaughter and

Rhoades (2004) examined to what degree academic capitalist knowledge notions entered the everyday work of the academic heartland. They concluded that academic capitalism has penetrated the core educational activities of academics and led to the appearance of so called educational entrepreneurism. Their study clearly shows how new managerialism techniques have touched the internal culture of academics. It made marketing and commercialisation of knowledge usual activities that a university organisation can profit from. New managerialism and academic capitalism create an environment where universities and their units, corporations, and various state agencies exist as a whole in a number of networks but not as individual organisations. In search for additional sources of income and better effectiveness universities have become more "entrepreneurial". It is another concept that is tightly connected to NPM as a set of techniques and practices that universities choose to use in response to the complex environmental changes. As Vaira (2004) noticed, the entrepreneurial model becomes the main legitimated organisational principle, deemed to enable higher education institutions to cope with the challenges in their new environment and constitute the pathway to pursue restructuring process.

The idea of the entrepreneurial university was first presented by Clark (1998) to describe the way in which higher education institutions are pushed to transform by enlarging streams of demand, modernize their increasingly expensive physical plant and equipment, and cut their costs while striving for more efficiency. Moreover, they are compelled to do it much more rapidly than ever. An entrepreneurial university actively seeks how it will innovate its own business, changes are seen very desirable and organisational development are necessary (Clark, 1998). Clark takes his examples from 5 universities throughout Europe but in every case study many of the features of new managerialism can be seen, although it is not the terminology he uses. These features include the search for new, more efficient ways of carrying out main activities and setting up new organisational forms where corporate and applied research can be carried out. "Entrepreneurial university" as well as new managerialism highlights the necessity of professional management and effective budgeting systems since universities express a notoriously weak ability to steer themselves (Clark, 1998). Another important feature of the entrepreneurial university is an integrated entrepreneurial culture which embraces change and a transformation of beliefs. Although Clark does not show how exactly such a culture should be created and communicated and how it can conflict with the existing organisational and disciplinary cultures, he proves the importance of it in the overall transformational process. However, culture is one of the factors

that can impede the transformational process and may cause major problems concerning adaptability. Universities strongly rely on their traditions, as Maassen, Jongbloed & Neave (1999) state. Even modern universities reveal the traditions and values that have always been present in academia and some of the everyday activities have never changed. So, while HEIs may use some strategic approaches in order to survive in the new environment, the processes and activities in their basic routines may stay the same.

Critique. Despite the fact that NPM ideologies have been implemented in many higher education systems around the world, the process has raised some questions. Firstly, a number of scholars have criticised NPM for the perceived contradictions and trade-offs among the principles of NPM. Politt and Bouckaert (2004) have identified a handful of such trade-offs that include making public expenditure savings while improving public sector performance, motivating staff and promoting cultural change while weakening tenure and downsizing, reducing burden of internal scrutiny and associated paperwork while increasing an emphasis on managerial accountability, etc.

Secondly, the whole notion of NPM as a new movement is being criticized. Williams (in Meek, 2003: 9) suggests that performance measurement literature begins in the early twentieth century, performance budgeting in the 1950s, management by objectives was being discussed in the early 1960s, and privatization dates back to as early as the 16th century. Moreover, the privatization is also criticised for its negative implications for democratic values and public interest. Gregory (in Meek, 2003: 10) argues that an emphasis on productivity leads to a decline in a sense of community and public trust. The university sees its students as customers or clients and should seek out ways to satisfy their needs. Such logic, many researchers argue, questions the role of the university as a public agency and may lead to unpredictable negative results.

To summarise, there is a fair deal of debate on whether the New Public Management ideology has been embraced by the public sector or whether public organisations find ways to resist it. However, it is impossible to overlook the entrepreneurial discourse in which modern universities find themselves nowadays. The university is seen as a corporate enterprise in a knowledge industry, praising efficiency as a core value, focusing on customers' needs and their satisfaction. Professional management is seen as a logical tool on the way to achieve these goals. Overall values and traditions of academia are attempted to be changed and embraced in a new entrepreneurial culture that encourages academic capitalism, contract

research, networking and competition. The university becomes innovative and entrepreneurial – words that do not surprise its stakeholders anymore. They seek new ways of organising research and teaching and the CoE may seem to be a good answer to that. However, values are not changed overnight, especially those deeply rooted in disciplines (as for academics). There might occur a conflict between the traditional ideology and new managerial, or entrepreneurial one. But even if the New Public Management has failed to deliver on many of its promises and its ideological and intellectual foundations are cracking (Meek, 2003: 26), its global ideological context should be appreciated. It has certainly changed the conditions of the public sector and shaped its development.

2.3 Classical European University Model and its Features

Every action causes a counter action, as it is often said. With the wide expansion of new managerialist ideology the true notion of the university as a public institution started to disappear. At the same time it has been discussed so much in recent decades as it has never been done before. Despite the fact that the utilitarian view at the higher education systems has a dominant position in all reform documents and speeches, there are competing views. Magna Charta of European universities can be considered as one of them. In the Magna Charta-process university rectors are the main participants, and instead of seeing the university as a tool for economic and social goals, it has been conceptualized as a specialized rule-governed institution with a constitutive academic identity, purposes and principles of its own (Olsen & Maassen, 2006). So, the process praises the original role and characteristics of the university as a cultural institution despite all the environmental changes that lead to instrumentalisation of the university.

The Classical model is a result of the idealist tradition which focuses on the Berlin University of the early 19th century. It emphasises academic freedom and institutional autonomy, which are the main prerequisites to ensure the freedom of teaching, freedom of learning, and freedom of knowledge (Lehrfreiheit, Lernfreiheit und Freiheit der Wissenschaft). The unity of science and teaching is the key element of the "idea of the university". The state plays an important, but relatively limited role in university affairs. Its main duty is to safeguard and guarantee institutional autonomy and the search for knowledge for the sake of knowledge itself (Bleiklie, 1998). Protection and funding from the state, autonomy from the government

and powerful economic and social groups are all justified by society's need for pure objective knowledge.

In this model the university is mainly seen as a public institution serving the common good. It is rooted in the Enlightenment and the German system. Teaching and research are considered to be inseparable while individual intellectual and moral development is one of the main tasks of the higher education system. The aim of education is to form individuals in academic-humanist attitudes and make them informed and responsible citizens (Olsen & Maassen, 2006). The search for truth is founded in the belief that knowledge is most likely to be advanced through free inquiry, validation through peer-review, independent expertise, and organized public scepticism. Academic freedom of inquiry is seen as one of the core values. It attributes to the right to fearlessly question the generally accepted wisdom and publish the result even if it is controversial to the political, economic, religious and other power groups (ibid). Free inquiry is also a significant attribute of an open society and science aspires to be culture-shaping, providing models for problem solving, conflict resolution and social integration for a democratic society and civilization based on rationality and power of a better argument (Habermas in Olsen, 2005). Humboldt's ideology of education through individual scholarship has substantially reinforced the highly professionalized scholarly disciplines, which made the German university system universally attractive to scholars throughout the world.

Not only has the provider of education and research traditionally been seen as a *public agency* but also as an *autonomous cultural institution* where the internal organisation was grounded in autonomous chairs with affiliated apprentice students, or the chair-faculty system (Bleiklie, 1998). The most important expectation of such a system was outstanding academic quality. Chair-holders maintained their authority through excellent research, by attracting talented students, and by creating good research environments. Only the professors themselves were entitled to evaluate their own performance as a group of peers (ibid), and the authority rested primarily within the collegium of chair-holders. The role of public authorities remained very limited: to secure the freedom of research and teaching by legal and financial means.

As for the culture of the classical European model, it can be described in a few dimensions, which are discussed below. *Academic autonomy* is considered to be a very significant and incontestable feature of the model. It has not been always supported by the public authorities

but has been consistently claimed by the academics themselves. Autonomy in this context is concerned with the following aspects:

- Autonomy from the political power – since the politicians and the state have tried numerous times to instrumentalise the higher education institution and to shape its power.
- Autonomy from the economic power – due to the fact that it is not only interested in the outcomes of the teaching and research but also in steering its development (Braga Da Cruz, 2006).

The European university has always fought against the attempts of gaining institutional or personal control over its body, defending and claiming the independence of academe. It comes as no surprise that it is the first principle that the Magna Charta of the European Universities asserts.

Another dimension touches upon the *university of knowledge* which concerns the obligatory unification of knowledge and interdisciplinarity. This principle resulted in a plurality of schools and disciplines. The university never limited itself to searching for scientific knowledge and enhancing employability of its graduates. One of its proclaimed aims has always been the provision of higher cultural education. Education at the university – the higher level of education – has always been seen as a step forward into scientific research, as a preparation for professional careers and the acquisition of higher culture on a more general level (Braga Da Cruz, 2006).

At last, the communitarian aspect has always been found in the traditional work of the university. Over the centuries it has been a community of scholars, students and researchers despite their geographical locations. The unification of knowledge was generated and thoroughly followed by a community of people who interacted in their own particular way.

Continuing on the cultural aspect, Clark (1983) notes the difficulties of transforming academic beliefs deeply embedded in the disciplines and loyal academic structures. He suggests that academics may start behaving more entrepreneurially and obey the administrative apparatus on the surface while their core activities remain untouched. Furthermore, Birnbaum (2000), a former promoter of business management models in the universities (and now an active antagonist) agrees with this point of view. He argues that the analogy between business enterprise and a knowledge organisation simply cannot be drawn.

While businesses are motivated primarily by the desire of profits and must continually adapt to changing customer tastes, HEIs are mainly motivated by a set of core principles that must be conserved if they want to maintain social significance. Moreover, since within HE organisations "produce" something intangible – the transformation of an individual – they cannot be assessed the same way as business companies assess their profits.

Despite all the noble aims of the classical European university which praises the values of Humboldt, there are certain drawbacks that explain its continuing loss of significance and disability to survive through centuries. Firstly, it was based on the ideal view of Humboldt and did not take into account the problems of practical reinforcement of the model. Although the model helped to constitute scholarly disciplines as the basic social framework for the professor, it proved incapable to provide the basis for international leadership when natural sciences became collective, technologically advanced, and expensive enterprises. The age of Big Science and technology has brought the necessity to take up new forms of applied science and professional training, but German universities and those that followed their successful model found it difficult to allocate the social and economic support necessary for maintaining international leadership. However, the Humboldtian model and the values it promotes are often referred to in a crisis discourse. In the modern days when the European university seems to stand on the crossroads, "lagging behind" and "under-performing", the values characterizing Humboldtian university are discussed more and more. While administrators underline the importance of cost-efficiency and academic capitalism, researchers themselves try to resist a one-sided market-oriented approach and return to the initial values rooted in the Enlightment and the German model.

To conclude, universities are being highly influenced by the new administrative rule that has spread with the development of managerialism. However, they strive to maintain their social significance by tenaciously adhering to the core principles and values that have existed in the university from the time it was first created. Indeed, it is difficult (even impossible) to find a genuine Humboldtian university in the modern globalized world but some of its true features can be found in almost any HEI and its units. By trying to maintain the universal principles of freedom of research, knowledge, and teaching universities can even invent new organisational settings. There academics can be freely engaged in their main activities and exercise the core values. Centres of Excellence can represent these organisational settings. It is the aim of this paper to examine a case and conclude if the CoE functions according to the comparatively

new market ideology or whether it is the place where academics praise CUDOS values and Humboldtian ideals.

3 Operationalisation of the Concepts

According to Blaikie (2000: 133-134), operationalisation is necessary when transforming theoretical language into empirical concepts. Operationalisation is done by specifying the procedures and characteristics by which the theoretical concepts will be measured. The indicators that will be defined below will be used to measure the concepts in order to produce data for measuring it. Since "modern entrepreneurial market-based model" and "classical European model" are rather vague concepts, the further definition of them is necessary for this particular project. It was decided to use *organisational structure*, *leadership*, *culture* and *external links* as four main variables of the concepts.

3.1 Organisational Structure

Traditional European university model. Organisational structure means responsibilities, authorities and relations organized in such a way as to enable the organization to perform its functions. Obviously, the aims and functions of the two discussed models differ and therefore, structures will have several unlike elements. In the organisational structure subcategories can be found. Firstly, this question covers the internal integration of a unit, and secondly, the integration of the unit with the other parts of organisation.

According to the classical European model, ***the internal integration*** can be characterized by the "collegial" organisation with some features of bureaucracy. It is often referred to as a "chair-faculty" system. Although the professors were appointed by the state in the old days, there was a certain freedom when it came to choosing a rector and deans. Disciplines play an important role in the structure and were embedded in the organisation. Hierarchy between the professors did not literally exist since no person could teach at the university without "Habilitation" – the evidence of serious scholarly work beyond doctorate. This specialized training set the professors apart from non-members which is a distinguishable characteristic of a collegial system (Birnbaum, 1988).

Professor assistants and teachers were a part of the structure and were under the control of the chair holder. The individual chair holder received the funds from the state that were negotiated over his university appointment. In the beginning of the 20th century the chair holder got to be responsible for the overall steering and direction of the HEI (Enders, 2001).

Faculty were expected to be scholars and to keep current in their disciplines, to conduct research and teaching through the research. It was believed that the only way of teaching new students was involving them into the high-quality research, making them independent and ready to make their own decisions. There was no competition between the faculties, they were all taken equally. An important part of such an academic organisation is that its members have been granted tenure positions which allowed them to develop strong links with the organisation and be more engaged in the current issues.

Concerning ***the links to the other departments and faculties***, the connection cannot be described as very strong. The power of academics lies in their disciplines in such an organisation. Nevertheless, academics collaborate with each other when an important decision is to be made. In other cases, such a system is primarily solitary and has weak connections to outsiders. The collegial system is also characterized by the concern to the views of non-members such as students, graduates, and other minor academic staff. However, the right of these groups to participation in decision making processes is severely circumscribed and often only symbolic in nature. Decisions are made by consensus and not by fiat, so every member has a right to speak and express his ideas. Obviously, some members are more influential and persuasive than others but these differences arise from the personal characteristics of the members, not the official or legal status. The views of the senior faculty are more influential than those of their juniors, for instance.

The collegial system has been criticized for the inability to look to the future and pursue a self-defined agenda pro-actively. The decision making by consensus inherent to the system has its drawbacks: it is too slow and demanding and very difficult to achieve. Meyer (2002) asserts that collegial self-government in the academy vastly underutilizes the knowledge and expertise of the faculty as a whole. Under such a system the whole is less than the sum of its parts as the professors have to ensure that their autonomy stays untouched. With the massification of higher education in the 20th century it has become more difficult to support the system described above: more students require more resources, basic research has started to be replaced by applied research, and infrastructure has had to be widened. All these have led to the natural evolution of the system, few innovations have been made. However, as it is suggested in this work, some basic characteristics may have stayed the same, especially in such a small unit of the university as the Centre of Excellence. Moreover, several collegial

system universities can still be found. They are usually small and egalitarian with strict entrance requirements and are aimed at prestige-maximization.

Modern entrepreneurial (learning), market-oriented model. In short, the structure of the modern higher education organisation that falls under the influence of environmental developments can be characterized as a middle point between hierarchy and networking and tight and loose coupling. The new ***internal integration*** structures are characterized by the widened administrative apparatus, new departments (e.g. for innovation, quality assurance, external relations, etc.), presence of feedback loops and a great degree of self-organization (Meyer, 2002). Usually in such structures the Director is appointed by the Board which consists of interested stakeholders. Heads of administration and faculties report to the Director and are responsible for the development of their areas.

Such organisations are usually characterized by the stronger organisational steerage (due to the accountability to society, state and other stakeholders) and a shift to strategic management; an increased use of cross-cutting organisational units (such as innovation bureaus and research laboratories), prevailing team forms of organisation, competitive and incentive-based funding; attempts to empower the customers – the students of the unit. None of these could be possible in the chair – collegial system where main institutional pillars are autonomous self-directed professor-researchers independent and chiefly solitary in their research.

Since under the new state of affairs team-based collaboration is significant, such an organisation requires active ***collaboration with the other departments and faculties***. It is formed around specific goals and projects. As Meyer (2002) describes, some organisations of HE have begun to complement collegial decision making with forms of managerial and executive decision making, involving strategic decision makers from inside and outside the organisation.

Networking is another distinguishable element of the modern academic organisation. Although it can be argued that it existed almost from the beginning of the university, it has taken up new forms in recent decades. Whereas it was mainly embedded into the discipline in the past, networking is taking place on the whole organisational scale nowadays. Conceptually, networks are positioned halfway between structure and culture (since it is an important way of communication). Communities of practice emerge and communicate

through networks which are held not by the central formal authority but by myriad of social, moral and occupational ties (Meyer, 2002).

It is possible to define several drawbacks of such an organisation based on the descriptions above. Firstly, the competition between the faculties and departments is rewarded. The consequences of it can be deplorable for the units and departments that traditionally do not attract many resources and do not conduct applied research. Moreover, despite the prevalence of efficiency and effectiveness discourse in modern HE steering, the organisational structures are made heavier and more bureaucratised with the emphasis on the quality and results and therefore, numerous reports and applications. Besides, certain tensions may arise between administrative and academic staff when important decisions are made. However, such a system has been forced into practice by governments all around Europe and elements of it can certainly be found to a larger or smaller extent in almost all HEIs around the world. .

3.2 Organisational Leadership.

Despite the fact there is no single leadership and management theory for the field of higher education due to the diversity of forms of HEIs and their goal ambiguity (Bush, 2003), a certain type of leadership can be determined by the political, economical, social and psychological state of the institution (Middlehurst, 1995). Based on the literature reviewed, it was decided to divide the question of leadership into two categories: ***decision making and authority*** and ***duties and role of the leader.***

Traditional European university model. Leadership in that case is based on negotiation, persuasion and the development of consensus. Hence, the leader does not exercise much ***authority*** and the ***decision making*** process includes all the involved members. This kind of leadership is transactional in nature and is constrained by cultural expectations of the organisation members (Middlehurst, 1995). Authority based on the professional credibility can be exercised because the group has ceded some of its autonomy in exchange for the provision of financial resources, protection, and an organisational framework that allows professional freedom to be maintained. Due to the fact that such an organisation exercises collegial approach to decision making, it is widely accepted that the leader does not have much authority. On the contrary, the authority is spread out in the organisation and the decision making power covers all the levels of the unit.

The ***role of the leader*** in that case is both emblematic and symbolizing the interests of the group through personal background and approach, and active in terms of negotiating and lobbying the interests, needs and standards of the group (Middlehurst, 1995). There is an expectation that the formal leader will consult and communicate widely and that other professionals will participate in the discussions and take part in forming the direction of the unit/institution. Other forms of leadership, be it formal or professional, can also be spread throughout the institution since autonomy is exercised largely (ibid).

Following Middlehurst's (1995) analysis of leadership styles, collegial or professional perspective suggests that the leader is considered to be a representative of the group's achievements and aspirations or the group's servant. Middlehurst calls such a leader a "provider" since the needs and aspirations of the professional group are paramount and a leader must do everything to protect them.

The collegial approach based on the principles of academic freedom and self-regulation is typical for the organisations with the professional homogeneity but it is considered that it has ceased to exist due to the more complex organisation of the HEIs. However, it is still can be found in many HEIs that are highly fragmented (Larsen, 2003). The collegial approach was criticized for not reflecting the actual state of affairs in the modern HE organisation and it is seldom observed in the top-level decision making. It certainly exists in the smaller departments and can explain the nature of the higher education institutions as they were several centuries ago.

As for the *modern entrepreneurial (learning), market-oriented model*, the increased market orientation and environmental pressures have led to a situation when academic values and considerations are no longer predominant in the governance of the academic institutions. Clark (1998) has promoted the idea of a professional and strong steering core. He means that the core is the main element of success in the modern university organisation, responding to the numerous environmental changes. In this model the relationship with the environment becomes central. ***The decision making power*** belongs to the leader and the Board of Trustees. Numerous outside actors can also take part in steering of such an organisation. Authority is mainly based on the formalized leadership. In such organisations professional managers and administrative staff take over the academic leaders and lead the organisation according to the market rules. There is still a certain degree of freedom in such organisations but the managerial views on the way the organisation should function are prevailing.

In such a complex organisation ***the role of the leader*** differs from the one in the traditional academic unit. The leader is responsible not only for the organisation of entrepreneurship but also for building up external relations and attracting external resources. Middlehurst (1995) suggests that in the entrepreneurial type of the organisation of knowledge production the leadership role consists of: "facilitating and regulating the delivery of services by the operating units; developing and enacting a vision for the institutions or unit; political lobbying; business and market planning; risk analysis; incentive building; effective process of staff selection, appraisal and development; and regular evaluation of an individual, group and institutional performance".

Taking into account the topic of the project, it is worth to mention that many academics and researchers suggest that modern academic leadership should preserve some characteristics of the collegial model. Bayenet et al. (2000) believe that the symbolic entrepreneurial leader should take advantage of the situation and delegate the pure management functions to the widened administrative staff in order to give their own position strategic and collegial orientation. For Dill and Sporn (1995) the dominant culture of the universities remains collegial and therefore leadership is bound to integrate academics' opinions in their decisions. Thus, it is advised to spread the entrepreneurial belief among academia (although it is not clear how to do it).

3.3 Organisational Culture

Organisational culture is an idea that describes the psychology, attitudes, experiences, beliefs and values of an organisation, to put it shortly. Obviously, environmental pressures change the conditions within which an organisation works; therefore, cultural changes take place. However, as Schein (2004) suggests, culture is the most difficult organisational attribute to change outlasting organisational products, services, founders and leadership patterns. Thus, for the purpose of this work it will be necessary to study the differences of the traditional and new entrepreneurial culture. It was decided to distinguish between ***the culture of the academic organisation*** and ***the culture of the academic profession*** for the ease of understanding.

Traditional European university model. The dominant value of such a culture is *freedom.* The freedom is reflected both in the ***values of the academic profession*** and ***organisational culture.*** Starting with the latter Clark (1983) sees freedom as an objective of the university

existence. Moreover, the value is reflected in the organisational expectations: freedom from the external controls (State) and significant academic autonomy. The most important activities of the academic organisation are research and teaching and therefore, the developments will arise and the decisions will be made in the departments where they are conducted. In this culture such decisions will be mainly disciplinary-based. Academics feel united within the same unit and discipline, where they tend to share the same culture, norms and language (Becher, 1994). The unity and cooperation between academics is defined by Dill (2000) as "the clans' model" or, as it was mentioned above, the collegial form of integration. However, according to Clark, it is also possible that the organisation itself unites the academic staff, the saga, created within the university's or unit's walls can serve as a significant uniting factor. The academics can be found loyal to the informal norms, selective recruiting, administrative rituals, ideologies, and other characteristics resulting from the history, i.e. the organisational saga.

The role of the administration in such a culture is to serve the needs of the academics and not interfere in internal affairs. The main motivational factor is freedom and flexibility which are eagerly taken by the academic staff, leaving less pressures due to accountability and effectiveness. Such culture can seem conservative but still can be successfully performed in small organisations. It was described by Handy (1985) as "person" culture (McNay, 1995). It means that individuals believe themselves superior to organisation and a group of like-minded individuals pursue an organisational goal.

As for the ***academic values***, the freedom of research, teaching and knowledge are the top necessities of the profession. There are literally no limitations to the areas of research, methods and time. The knowledge is universal and the basic research is preferred over the applied research. The relationship between the students and academic staff is casual and students are considered to be apprentice academics with a future in a research career. The only basis for assessment is peer evaluation sacred to the culture. Networks and networking play an important role when it comes to decision making arena and peer-reviews, which is somewhat similar to the modern university organisation. Academics are mostly associated with the disciplines but not the organisation itself.

The culture depicted above is very resistant to change; the change is possible only through organic innovation. The only condition for the radical change is the performance crisis, which is observed in Europe, according to numerous policy documents. The collegial culture is

regarded by many as outdated and unable to reflect the changes in society. However, small organisations devoted to one discipline can maintain the values of the 19th century university and perform quite effectively. After all, thorough candidate selection, devotion to research and teaching through research, and respect to the academic freedom are among top agenda of the most successful schools and institutes.

Moreover, we cannot omit organisational culture and values. Despite the fact that values and motions of each academic organisation can vary, they all have something in common: the trust in independent knowledge and belief in academic profession and freedom.

Modern entrepreneurial (learning), market-oriented model brings with itself a new culture which drastically differs from the collegial culture. Firstly, the main values here are the client and competence (McNay, 1995). McNay (ibid) argues that the university ***organisation*** is moving to a corporate enterprise ***culture*** and that changes are inevitable. Such culture is characterized by the domination of clients' interests and the situation when the skills and professionalism of the academic workers are directed to meet the needs of those who seek their services (utilitarian view). Therefore, the key decisions are made close to the client within a well-defined policy framework. In academic terms, the curriculum should be organised in a way that it can serve many emerging needs and new population groups, and the entrepreneurial skills and competences should be developed accordingly. Such a culture is also one of the key elements of the entrepreneurial university, according to Clark (1998). He wrote that the integrated entrepreneurial culture stressing the will and necessity to change and to take risks can be transformed into a common belief. Nevertheless, he considered this process to be problematic and unclear and did not depict the stages of the culture change.

Moving further on the corporate-entrepreneurial culture, it contains a significant "learning" element. Learning from the past experiences, to work in a team, and to take and manage risks becomes crucial in such organisation. Thus, the term of "learning organisation" can be applied to a university that has taken up the entrepreneurial culture (Kristensen, 1999). Another characteristic of the culture is a close relation to the environment. Due to the market sensitivity, the main products of research and teaching are constantly changing based on relevance, which may cause certain problems with the balanced curriculum. Administration is no longer the servant of the community but of the client, both internal and external (McNay, 1995).

As for the ***values of the academic profession***, the traditional ones start to disappear. The knowledge is more often judged by the relevance to the stakeholders' needs. Collegiality is being replaced by the more structured approach to the science. Freedom is limited by the accountability issues and the need to acquire resources for future functioning. Further on, the assessment basis is completely different from the one in a traditional model. Performance indicators and business-like mechanisms come into the reality of academic organisations replacing peer-review systems. Referring to Handy (1985) it is the time of "task" culture where teams are formed to solve particular problems. In that case power derives from expertise as long as the team needs it and communication is based on networks. The students are clients and they are no longer necessarily expected to pursue academic careers. Therefore, the admission process is being simplified.

The entrepreneurial culture reflects the necessity of the modern academic organisation to react to the environmental changes and to be proactive. Consequently, the academic values of pure science and scholarship are replaced by the market values of competition, clients' needs, and entrepreneurial activity. Traditional academic culture is nevertheless, reluctant to change and the core academic activities may still remind those two centuries ago. Although academics are said to embrace academic capitalism (Slaughter & Rhoades, 2004), it is still too early to make conclusions on whether the university culture is getting more entrepreneurial with every passing year.

3.4 External Links

The *traditional European university model* does not acknowledge influence from the outside. The whole purpose of the HE organisation is to conduct independent research and teaching that are beneficial for the concept of knowledge as a whole. Some links with the state, nevertheless, are still observed. In the Humboldtian model the state appointed professors who could serve its needs the best. It also provided all the necessary funding but without interfering in the financial autonomy. So, it becomes obvious that the university organisation in this model was not accountable to the numerous stakeholders as it is observed nowadays. However, if to take international scientific relations into account, it is the essence of pure scholarship and professionalization of science that made it possible in the first place. Universities have always been international to a certain degree, with numerous external links to similar organisations all over the world. But it was at that time when the Humboldtian ideal was realized that the growth of scientific disciplines with networks of communication among

institutions across national borders became enormously wide. So, the external links in this model are established for the sake of the community of scholars and the knowledge that they produced.

On the contrary, in the *modern entrepreneurial (learning), market-oriented model* the academic organisation is accountable for its activities and has to justify the resources it gets from the state, corporations, businesses, and other donors. In that sense it resembles a big business that operates according to the market rules. The concept of stakeholders is essential here and it reflects the importance of higher education to the societal, political, and economic development. Such organisation has many clients: traditional state, students, their parents, financial institutions, businesses, and research units outside the university system - among many others. Contract applied research is one of the ways for the university to find resources and therefore, links with the environment become ever more important.

With globalisation and internationalisation, networking outside the university system continues to grow. Due to the massification of higher education the scale of mobility has increased dramatically. If in the past the nature of mobility was mainly the production of pure knowledge, now it happens in different forms: it's the exchange of knowledge and experiences, it's the aid to underdeveloped countries that lack professional skilled workers, and it’s the service that can be exported or imported. So, while the university is still basically involved in the tight cooperation with the same institutions all over the globe, the cooperation takes up new forms and shapes.

3.5 Operational Framework

Based on the literature review presented in this chapter, the operational framework for the data gathering and analysis at the APC was developed. It contains the most significant features of the two discussed models and will be used as a basis for the interview questions and analysis of the study. The operational framework is presented on the following page.

Table 3.1 Major Features of the Two Models

CoE features	Models	
	Traditional	*Modern Market-oriented*
Structure		
1)Internal integration	Chair-faculty organisation, collegial structure. Decisions are made by consensus, weak hierarchy.	Decentralization, widened administration apparatus, feed-back loops, self-organisation, ad-hoc teams.
2) Structural link to the department	No competition between departments, weak links to other departments, the disciplinary basis of the cooperation.	Strong competition between faculties & departments, improved collaboration.
Leadership		
1)Decision making & authority	Decisions are made by consensus, symbolic role of external stakeholders, low degree of accountability	Boards of Trustees, stakeholders take part in the decision making process, decentralized with a high degree of accountability.
2) Main duties & role of the leader	Leader as a representative of the group's achievements and aspirations, servant and provider. Authority based on negotiation, persuasion & consensus. Mainly responsible for communicating the needs of the group.	Professionalized and formalized leadership responsible for planning, resource distribution, staff management, marketing and communicating initiative. Leader as a link to the outside groups.
Culture		
1) Organisational values and objectives	Dominant value – freedom. The organisation provides freedom and flexibility, low possibility of loyalty to organisation.	Dominant value – client. Learning culture, close relation to the environment, permanent evaluation and quality assessment.
2) Academic values	Individuals are superior to the organisation; student as an apprentice academic – strict selection of candidates; administrators as servants; evaluation through peer review. The culture is very resistant to change	Student as a client; administration serves the large clientele base; evaluation through performance indicators and business mechanisms. Fast adaptation to change, rational learning.
External Links	Weak links to the state. Wide communication with the other academic and scientific organisations.	Accountable to the variety of stakeholders: state, society, donors and finders etc. Wide network of links not only to academic organisations but to other international organisations; involved in international projects.

4 Research Methodology

4.1 Research Approach

The work under discussion uses qualitative approach and case study methodology. It was decided to use this approach as the most appropriate for the purpose of the work. According to Bryman (2004), the choices of research strategy, design and methods have to be made in compliance with the specific research questions. Qualitative research emphasises qualities of entities, processes and meanings that are not experimentally measured in terms of quantity, amount, intensity, or frequency. Such research aims at the nature-laden nature of inquiry. It seeks the answer to the questions of *how* social experience is created and given meaning. Quantitative research on the other hand, emphasises the measurement and analysis of causal relationships between variables, not the processes (Denzin & Lincoln, 2005). The research questions of the work under discussion are mainly "how" and "what" in nature. It means that the study focuses on the processes and contextual understanding of the phenomenon. One of the main advantages of the qualitative study over the quantitative one for this case is that the former facilitates study in depth and detail, it emphasises that the behaviour, values and other characteristics can be understood in the context, in terms of the "specific environment they operate" (Bryman, 2004: 281). It is especially applicable to the study because universities as well as CoEs find themselves in an extremely complex environment nowadays. Therefore, the deeper insights into the process of change and unique characteristics of the context are very significant for the work.

Furthermore, according to Creswell (2003), qualitative methods can be successfully used to explain or understand a phenomenon about which little is yet known. Qualitative study can help to better interpret a concept or a process that has not attracted much prior research. Although quite a lot is written on the university's adaptation, the influence of globalisation and internationalisation on HE systems in the developed countries, and entrepreneurial strategies of the universities, still little is known about the emerging Centres of Excellence. It is a relatively new setting that has unique features that have not attracted much of the research interest. Due to this reason qualitative research appears to be the most appropriate for the work.

In general, the use of qualitative approach is justified based on the assumption that it can provide a deeper understanding of the phenomenon and the significant role of the contextual background.

4.2 Case Study as a Research Strategy

The concept of case studies is difficult to define, as Yin (1994) claims, because it can be used in many different ways. While the term is used to define a number of cases as in quantitative research, it can also define a case as a focus of the study. However, the case study cannot be limited to either of the research approaches. Data gathering, processing, and analysis will depend on the type of the research questions attempted to be answered.

Yin (2003) suggests the case study strategy as an appropriate tool for answering "how", "why" and "what" questions. In other words, the questions require a descriptive or explanatory approach, which matches the aim of the work. Yin continues that the questions must be targeted to a number of contemporary events and conditions, over which a researcher does not have any control. A case study is defined as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident" (ibid: 13). Case studies in general focus on a detailed contextual analysis and the relationships between a number of events and conditions.

The research attempts to answer the questions of *how* the emerging CoEs can be interpreted in the context of the European university and *what* features they have. Hence, the choice of the case study seems like a suitable research design. Furthermore, the given research design gives a chance to collect, analyse and interpret data in its context. It is important because CoE is investigated in the context of the new environment and different reactions of the HEIs to this environment. It is a consequence of the modern developments of the university, and it is impossible to study it without taking various factors, events and their interrelationships into account.

The work under discussion uses a descriptive-exploratory technique and a single-case design. It allows the sequence of events (the environmental changes) to be traced, understanding of the subculture (resistant academic traditions), and discovery of the phenomenon (the emergence of the CoE). The choice is also supported by the fact that the study is examining contemporary events where relevant behaviours cannot be manipulated.

4.3 Research Design

According to Yin (2003: 21), the case study research design must have five important characteristics: the study's questions, its propositions (if any), its unit(s) of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings. The research questions emerged from the area of interest and standard techniques were used to pose them. Since the study is exploratory and descriptive in nature, a single proposition was difficult to make. However, we can suggest that the majority of the characteristics of the studied CoE relate to a) the new entrepreneurial (learning organisation) model; b) the traditional European (Humboldtian) model; c) neither of them; or d) both of them. In any situation the main focus will be on the purpose and aims of the study. For the purpose of the investigation the Aquaculture Protein Centre at the Norwegian University of Applied Sciences was chosen as a case study. The next chapter will give the full description of the organisation and show that the APC represents a good case for study. Concerning the analysis of the data, it is an interactive process when the researcher moves from the theory and literature to the field study and back to the literature (Yin, 2003). The method used in this work is the analytic induction. As a main guide for the research the case study protocol has been employed. It included the study procedures, questions, and a guide for a final write-up. The questions of the research have been covered using interviews and document analysis.

4.4 Data Gathering

Yin (2003) suggests that the case study should use multiple sources of data in order to bring out evidence from the participants' points of view. No single source has a complete advantage over the others; rather they are complementary and better used together. This study uses document analysis, interviews, and simple observation. The data sources are briefly described in table 4.1 on the following page.

The selection of the documents was based on the relevance to the theoretical models and the research questions. Thus, vision and strategy documents of the UMB and APC were revised. They explain the internal logic of the university and the CoE, their aspirations, and goals; the vision of the academics and overall organisational culture. Further, annual reports were given attention. They explain the formal structures of the organisations, show the use of performance indicators, external links, and can also be of use when reading the values of the

settings. The delegation order of the CoE under study served as an additional document showing power and leadership structures as well as the internal logic of the organisation.

The interviews were aimed at identifying CoE's organisational characteristics and relating them to the theoretical models. The questions for the interviews were based on the operational framework and included four main areas of the organisation: structure, leadership, culture, and external links. The interview questions were related to the different parts of these areas as well as the different kinds of information. While some concerned the biographical facts of the respondents and their knowledge of the certain facts, policies and structures of the organisation; the others concerned beliefs and attitudes, points of view and thoughts about the organisational characteristics. There has been openness to allow participants to talk about their present situations and behaviours. For the purpose of the interviews, a guide was constructed. It allowed for better time-management and a clear set of priorities during the interviews. The interview guide was prepared to ensure that the same basic lines of enquiry were pursued with each person interviewed (Patton, 2002: 343). Nevertheless, additional open questions were raised. The interview guide can be found in Appendix A.

Table 4.1 Sources of Data

Method	Sources of Data	Purpose
Document analysis	Norwegian statistical bureau; the research council of Norway - documents for the establishment of the Centres of Excellence; Higher Education quality reform statutes. Annual reports of the UMB and APC; Vision and strategy documents; The delegation orders of the organisations. Furthermore, the official sites of the organisations were revised to acquire up-to date information on the activities.	To draw an overall situation; to support other sources of evidence.
Interviews	Semi-structured interviews with the administrative staff, researchers and leaders.	To get the special data on the questions being investigated, to get an insightful picture of the organisations' functioning
Observation	Non-participant observation during the interviews; the observation of the working conditions of the researchers and leaders.	To obtain the overall information on how the organisations are structured the relationships between the personnel and leaders, the decision making processes.

The interview respondent selection was based on the purposeful sampling approach. Patton (2002: 230) suggests that the purposeful sampling requires the selection of the information rich cases which allows "in-depth understanding rather than empirical generalizations". The selection of the interviewees was based on the position and level of organisations to reflect the richness of variations within the university and the CoE. The number of respondents represents the common professions within the settings and reflects the diversity. The full list of the participants can be observed below.

Table 4.2 Interview Respondent Selection

	Profession	Section
1	Researcher, scientist	Gut and Health
2	PhD student	Gut and Health
3	PhD student	Gut and Health
4	Researcher	Gut and Health
5	Administrator	UMB, Department of animal science
6	Researcher, leader	Feed ingredients and processing
7	Researcher	Feed ingredients and processing
8	Engineer	Feed ingredients and processing
9	Researcher, leader	Feed ingredients and processing
10	Administrator	The APC, located in FIP
11	PhD student	Feed ingredients and processing

The respondents were first approached by e-mail in which the study and its procedures were described. Later the key respondents were chosen and interviews were arranged. They took place at the respondents' offices and had an open-ended character where an interview guide served as a tool to ensure that the interviewees provide information on the issues relevant to the study. During the interviews a tape recorder and a notebook were used. The informants were asked for permission to be recorded. The researcher used a notebook to write down the main points of the interview. After the course of the interview, the researcher came back to the main points and interviewees were asked to reflect upon them. This way the informants had time to think over and describe the issues most important to the study. The interviews

were then transcribed and used during the analysis. However, some first impressions were written down in the protocol and given a thought during the analysis too.

Difficulties encountered

During the interviews certain problems were encountered. Firstly, the number of interviewees was limited and the data gathering did not include one of the sections of the organisation. Therefore, we can only judge it subjectively, according to the words of other employees. Furthermore, the interviews were held in the foreign language both for interviewees and the interviewer. That made it difficult to concentrate on the main point of each question. It also caused some problems with understanding some of the questions. It led to the situation where the interviewer had to explain certain terms and events which might have influenced the respondents' attitudes and answers. Moreover, the language issue could have caused the difference in meanings of the words for both sides. These problems were attempted to be overcome during the analysis stage, when the interviews were carefully transcribed and given a thorough examination. Besides, the use of multiple sources of data guarantees the consistency of the study. However, a reader should be aware of the negative factors during the interviews.

4.5 Data Analysis

The final purpose of data analysis is to examine, categorise, tabulate and recombine the evidence to address the initial propositions of the study (Yin, 2003). In qualitative research the processes of data gathering and data analysis are interrelated. Therefore, Yin (2003) suggests that every case study should have a common analytical strategy. The possible strategies include: pattern-matching, explanation-building, time-series analysis, and program logic models. For the purpose of this work content analysis aimed at identifying core consistencies and meanings was used. Once the raw case data have been accumulated (through the interviews, organisational documents and observations), and the case study record has been organised, the search for the common patterns (pattern -matching) or themes has started. The common patterns were analysed according to the theoretical framework presented above. According to Patton (2002: 493), such an approach refers to the “analytic induction” method of analysis. First, we developed the hypotheses prior to entry into the field. These hypotheses were based on the careful examination of research and theory. Then

hypotheses were revised to fit emerging interpretations of the data over the course of data collection and analysis.

Several techniques suggested by Yin (2003) were used during the analysis to ensure that the study is of high quality. Firstly, all relevant evidence was used to create a rich and informational case study. Then, the analysis addressed the most significant aspect of the study: during the analysis the author always kept in mind the main research problem and questions and aimed all the efforts at answering these while pattern-matching. Finally, the researcher's own knowledge and experience were used to the maximum advantage to the study: the knowledge from the relevant Master courses as well as personal experience on conducting interviews and case studies have been applied for maximising the value of the research project.

4.6 Validity and Reliability of the Study

Validity plays an important role in an effective research. Although some authors suggest that validity and reliability are unreachable ideals in qualitative research (Auerbach & Silverstein, 2003), a certain measure of objectivity of the study should be present in all research projects. There are many different kinds of validity of the research (descriptive, cultural, systematic, theoretical, etc.) that exist in qualitative research (Cohen et al., 2000), Yin (2003) suggests that in a case study one must emphasise construct validity, internal validity (only concerns explanatory studies), external validity, and reliability. Construct validity can be strengthened using several methods: multiple sources of evidence and data triangulation, the establishment of the chain of evidence, and the preparation of the draft case study report that can be reviewed by interested participants of the study (Yin, 1994). In the case of this research project the construct validity was ensured by:

- Gathering information from different sources: i.e. interviews, simple observation, and document analysis.
- Establishing a chain of evidence between the observations, interviews, and written reports on the organisation. The information gathered during the document analysis was then proofed during the interviews and observation. Furthermore, the chain of evidence was used while drawing conclusions from the data gathered during the field work.

In addition, a case study protocol, where all the incoming information was carefully kept, was created.

External validity deals with the generalisability of the findings beyond the single case. A single-case study poses certain difficulties in attaining generalisability, as Punch (2005: 147) mentions in his book. Nevertheless, theoretical generalisability which suggests that the developed theory can be extended to other cases is possible. Furthermore, the study can be applied to the similar organisations with the characteristics resembling the APC (Punch, 2005), because it provides the in-depth study of the valuable characteristics of a rather new university unit that has not been fully discovered yet. However, external generalisability is not a crucial issue to the setting under study. As with any qualitative study it focuses on the underlying meanings, people's opinions, and processes of the unique organisation. Therefore, the main purpose of the research is to present characteristics of the CoE in the light of the theoretical model.

Research reliability ensures that the research instrument produces the same data time after time on each occasion that it is used. In other words, it ensures that the results of the study will be the same given the same setting and the same procedures. The reliability of the case study research can be maximised by using a case study protocol (Yin, 2003). In this particular study a detailed case study protocol including description of the organisation, the main research questions, description of research procedures, and methods as well as analytical means has been used to guarantee a sufficiently high level of reliability.

5 Focus of the study: The Aquaculture Protein Centre

In the year 2000 the Norwegian research council published a report "Quality of Norwegian Research" (Norges forskningråd, 2000) where the need for Centres of Excellence as organizational setting for the high quality international research was clearly stated. The rationale behind that was following:

- to provide quality research;
- to provide concentration of specific knowledge in one place;
- to answer the challenges of internationalisation;
- to recruit professional researchers;
- to conduct interdisciplinary research;
- to compete on the international arena;
- to provide maximum use of the research capacities;
- to concentrate research around the issues important for the development of the country (Norges forskningråd, 2000).

After two years of working on the project, the Research Council of Norway came up with the initiative of Centres of Excellence scheme. After the applications were evaluated, 13 new Centres of Excellence appeared in Norway in January 2003. The Aquaculture Protein Centre was chosen among them.

The APC was the result of the unified efforts of three organisations: the University of Life Sciences (UMB, Norwegian college of agriculture as of 2003) which hosts the Centre; the Norwegian School of Veterinary Science and the Institute of Aquaculture Research AS, Akvaforsk, which was originally founded by the Norwegian college of agriculture in 1971. All three organisations have had close ties based on research and academic cooperation. However, the research teams and the organisation in general have experienced several problems during the process of establishment.

In the first year as a Centre of Excellence, the APC employed 26 people, 16 of which were research personnel, 8 – graduate and post-graduate students and 2 – administrative staff. The

majority of the personnel were hired from the employees of the three founding organisations. The relationships with other organisations and research centres were poorly developed (Annual report 2003). However, with the financial support of the Research Council, the UMB and NVH, the APC has grown into an important international research centre in its field of developing sustainable farmed fish feeds. In 2008 the number of researchers has risen substantially (25) as well as the number of doctorate and post-doctorate students. As for now, the Centre has several guest researchers, which is the result of extensive international collaboration. The APC employs different techniques in attracting highly qualified staff and the selection of candidates for the ongoing projects is very competitive. During recent years the APC has become a centre of research and teaching not only for the PhD and post-doctorate students but also for the Master students that study at UMB and NVH. It proves the importance of the research-based teaching that is fully realized and exercised at the above mentioned HEIs.

The organisation of the Centre is simple. It consists of three departments that are divided based on the disciplinary field:

- Protein and amino acid metabolism (PAM);
- Gut and health (GH);
- Feed ingredients and processing (FIP).

The management of the Centre is organised in a flat leadership structure where the centre director plays a central role, centre administrator fulfils main administrative and secretary tasks (reports, organisation of meetings and conferences, simple budgeting), and three research leaders manage each of the three groups. The Centre also has a Board consisting of the representatives of the three mother organisations (UMB, NVH and Nofima) and one employee representative being elected every year. The Board has a duty to oversee the activities of the Centre, evaluate its research activities as well as budget and spendings (Annual report 2003).

The CoE emphasises the importance of publishing in the peer-reviewed journals as a significant indicator of the research outcomes. The number of publications has grown almost four times since the foundation of the Centre. The staff actively take part in various scientific conferences around the world and contribute to the international collaboration in this field. Although the external relations were underdeveloped when the APC just started its activities,

they are now the field the Centre can be proud of. It has partner research centres and departments in Norway, different parts of Europe, Asia, Australia and the USA.

As seen from the profile of the Aquaculture Protein Centre, it is an organisation that values high quality research while contributing to the development of the field both in Norway and internationally. It has a simple organisational structure and puts basic research and teaching in the Centre of its activities. As for the financial part, according to the annual reports 2003 – 2006, commercial research partly contributes to the prosperity of the Centre but RCN and founding organisations remain the main funding sources.

So, the APC represents a brilliant case for the study. It consists of several groups which will allow to analyse relationships between them; it has close ties with the universities, and it employs researchers and PhD students with a substantial academic background. All these characteristics are of high relevance, considering the research problem and questions.

The first glance at the identity of the APC does not allow overall conclusions to be drawn concerning its belonging to one of the theoretical models. Further insights into the leadership, culture, and other internal issues are needed to clarify the processes, relationships and details concerning the functioning of the Centre. A set of the interviews developed for the study, will help to understand underlying factors and details of the work of the Centre and shed some light on the issues that were missing or vague during the document analysis and evaluation.

6 Presentation of Data

In the following chapter the opinions and thoughts gathered during the interviews will be described. The empirical findings, emerging categories and themes were separated according to the operational framework presented above. The interviews did not cover one of the sections of the APC, however, opinions and thoughts about it have been gathered. The interviews were conducted during September, 2009.

6.1 Organisational Structure

Internal integration

The organisation has appeared to be very flat which proved the findings of the document analysis. The leaders of each group are taking not only research duties but some administrative work too.

All the respondents agreed that the work in the APC is organised around the projects. Not many personnel have tenure positions (in fact, only two) and the workload depends on the amount of projects that they managed to attract. The leader of the centre was changed in January, 2009 and many have admitted that there has been noticeable shift to the more commercial activities of the Centre. The change of leadership was approved by the Board. There has been a little degree of personnel turnover and new staff coming in. Many researchers at the APC are former PhD students who got a contract straight after the completion of their doctoral degrees. The respondents have emphasized the importance of the teamwork in the projects, because it is the way it is organised in the Centre. However, some of them have underlined that it sometimes causes conflicts, especially if there is a lot of money involved. The administrative staff working closely with budgets stated:

> *Everybody wants to be where the money is, of course, and if somebody gets a big project with lots of money, everybody wants to be in and it may cause some conflicts.*

The different research groups are cooperating on the basis of different projects and try to perform high-quality inter-disciplinary research. It is proving to be effective, especially between the GH and FIP sections. The researchers from these sections underline that they publish a lot of articles together, participate in common social events, and are generally satisfied with the degree of cooperation. One of the leaders of the group admits that:

> *The GH and FIP sections meet regularly, we might have meetings every 6 weeks to discuss the joint research issues and we communicate and plan the experiments together. The other section is different; they do a different kind of research. And besides, I feel that Oslo is closer, we have more collaboration*.

A researcher from the FIP section has the same opinion and stated that the cooperation between the two sections, in Ås and Oslo, has been very productive. However, the third section seems not to have fulfilled its original goal. As for the reasons of such a state of affairs, some people named the geographical position far up north of Norway, the others said it was purely personal when the barriers between the people's opinions are much bigger than the location. However, according to the leader's perspective, the collaboration between all three sections has been developing rather well during the CoE period. There have not been noticed any conflicts and arguments.

Furthermore, the majority of members in the organisation have admitted that there is always a competition between the groups for resources. The administrative employee has argued that while the general budget sum is divided in three equal parts, there can be conflicts about it since the number of employees in each group differs. A researcher who has been involved in this issue admits that:

> *There has been some discussion about how to divide the resources: according to the results or per head, because we have different number of employees in each section. But the equal amounts for each section will probably be for the best*.

Another researcher argues:

> *It starts off as a collaboration between sections, but then we have to pay each other for the different services and there is a lot of budgeting involved, and some people consider it unfair. So, we try to collaborate more but it doesn't always happen*.

The section that is involved more in the basic research and finds it hard to attract industrial partners is not judged by performance indicators. Since the RCN money is divided equally, the sections can all manage their research and engage into non-marketable research freely.

The decision making process is based on consensus to a certain degree. All the respondents agreed that the process is open and fair. The information on meetings is always available, the meetings themselves are held often enough to resolve all the upcoming issues. The general feeling about the decision making can be described by the following quotations of the APC employees:

> *You are informed and if you have something to say, you're given this opportunity, we usually make decisions all together;*
>
> *[…] there is always a freedom to speak out when the decisions are made; you are free to participate;*
>
> *[…] the organisation is flexible and there is always a feeling that you're listened to.*

The decisions are made at several levels: on the group level, between the groups, and on the Centre level. The group decisions do not need to involve other groups while the decisions about the joint projects involve all the participants. There has not been any noticeable conflict between the administration and researchers in the decision making process, because of the sufficiently small administration apparatus and because the main administrative staff from the UMB department do not participate in the process. The communication of the decisions usually happens orally and personally. Although some communication takes place through the ICT, most of the people admit that networking inside the organisation is of great importance.

Concerning the feedback loops, a researcher said that there is not particularly much feedback in the Centre but it might be because he does not need it and works well independently. Some PhD students were concerned with the issue and wished there was more feedback on their projects and work follow-up, while others say that:

> *[...] the feedback works if you take initiative, you have to constantly ask for it and want it, then you can get a pretty good feedback.*

So, if a member of the organisation needs the feedback, he/she must take the initiative and ask for it him/herself. Humble, independent, and modest researchers of the APC get it much less than those who are not afraid to ask for advice and use every opportunity to talk about their problems at work. The hierarchy does not exist in the organisation and it was repeated many times that the researchers and leaders are easily approachable and eager to help while the relationships between colleagues are free and informal. The titles are never used at work, even though many of the researchers are widely known in the field. Many admitted that it happens due to the culture of academia and egalitarian society in Norway.

Structural link to the department

The APC formally belongs to the hosting organisation, namely the University of Life Sciences. When the CoE was established some researchers of the UMB's department of animal science were employed by the APC, but now their number has substantially decreased.

As it was mentioned above, the APC is situated directly below the rector, skipping many organisational levels, the department included. At the same time the APC is outsourcing administrative services from the department and works close with the teaching programmes. This kind of cooperation seems not to be enough for the department and involvement in the decision making is desired. An administrative worker from the department of Animal Science of the UMB has voiced a concern and argued that:

> *They have a Board, and a rector of the UMB is represented there but the department here is not represented. So, that means that we have a group right with us, we are more or less responsible for their future, we have to take care of them, but we are not part of their decisions. We have to make the relationship between the Centre and the department stronger, so that more of it is like a part of the department's activity and that means that we have extra resources for carrying out research and we can hire more people for the projects.*

He also mentioned that such an organisation is not best suited for the CoE activities such as research, networking and teaching. There are some conflicts between the sections and inside the sections themselves, which influence the work of the whole Centre. He suggested that it would have been better if it just consisted of one group. That way many problems could have been avoided and the situation would be much better than now. The workers from the APC side agreed that the Centre could have been better integrated into the work of the department. They also admitted that part of the department's arguments is based on the money issue:

> *As a CoE we get a lot more projects than the university. There is always a discussion how much they will charge us overhead and there is always fighting for the money. However, we contribute a lot to the teaching and every time we publish, the department gets money for it.*

In short, although the department is responsible for the administration of the Centre, they do not possess any decision making power. The strongest link to the department is teaching. The stronger relationship between the Centre and the department is seen as beneficial to both sides.

6.2 Leadership

Decision making and authority

The APC as an organisation has to report directly to the Board which consists of the rectors of two participating universities, a representative of the Nofima marine, and an employee representative. So, it does not include any representatives of the outside stakeholders and the

decisions are made to serve the best interests of the organisation and its employees. This kind of organisation leaves a lot of room for flexibility and a certain ease of taking decisions. The Board decides only the most important questions of funding, budgeting, research revisions and strategic direction. In that sense the organisation is hardly centralised but rather flexible and open. The director of the APC can turn to the Board for advice on the most important and complicated issues, otherwise the decisions are made within the APC.

As for the decision making, the director does not possess a lot of authority and the decisions are in the most cases made by consensus. As one researcher has noticed, the director always collects information and makes sure that it is available for everyone. Then everyone can make their suggestions and participate in the meetings. The director of the organisation considers that there could be more authority delegated to her personally:

> *Soon I will have more authority, so that I have the overall responsibilities and can make a decision. If I need a second opinion, I will go and discuss it with the Board but more authority will belong to the leader.*

She also added that although some decisions require her strict supervision and decision making power, quite often she delegates responsibilities to her co-workers. She acknowledges that the employees are eagerly taking responsibility and assist her in many issues.

Main duties and role of the leader

The opinions about the main duties of the leader (director) varied slightly according to the section and the position of the respondent. The director acts as a leader of the organisation in the majority of questions. She combines both administrative and research tasks. It is worthy of mentioning that the organisation has only one administrative employee, so many administrative responsibilities are left to the director and group leaders. Researchers working at the Norwegian school of veterinary science had to admit that they do not see much of the leader's influence in their day-to-day activities:

> *She is 30 km away and we tend not to see her much. As of now, I haven't seen any drastic changes in the organisation*;
>
> *I do not work with her so often, but I get the feeling that she is not strict, more accommodating. The point is that they already have visions and plans and there isn't much that can change. We just have to follow the plan and try to fulfil the goals*;
>
> *In every day working environment it's not that noticeable, I guess. Maybe, because the previous leader was also from the FIP group and now it's in FIP again, so we don't notice so much difference.*

A researcher from the section situated in Ås revealed that there are some employees in the other sections that are not satisfied with the fact that the leader is from the FIP section, since there are concerns that she might not take care of the other sections as well and work mainly with her native section. The respondent added that it can even cause conflicts sometimes. Nevertheless, the majority of the respondents from GH did not show any apprehension about that fact and are generally positive about the leadership of the Centre. A researcher from the GH section admits that the leader is very good at team building and managing different people and their needs. She continues:

> *It is very little research that is being done by one individual and that is because of the development of interdisciplinary approaches when the expertise of different people is important. And that is the way academics worked for many years. I think that our leader is quite good at it*.

The leader herself acknowledges that team building is the most challenging and necessary work in the organisation, she believes that the Centre needs unified efforts and the main excellence of it is in the research personnel. In her native section, the FIP, the leader has received a lot of positive feedback. The employees at Ås said that they were influenced by the new ideas of the leader in a variety of ways and they are very satisfied with the director and the way she copes with the challenges.

The views on the role of the leader have diverged between the participants of the interviews. Quite a high percentage of respondents suggested that her main duties are to represent the Centre to the outside world. A researcher at NVH revealed that the leader is highly respected for finding necessary funding and networking with other organisations. One of the administration workers also said that the communication with the stakeholders is one of the most important part of the director's job. Another researcher who is completely satisfied with the leadership of the APC, acknowledged that:

> *[…] she is very organised. I have a very good feeling when she represents us, because I think, she acts very seriously; she has lots of experience from the industry which is good.*

A PhD student shared that point of view adding that:

> *As a leader of such a unique organisation, you must first of all, be able to plan, try to convince people to give money for the projects. We need someone who can market us, to go outside and find the money, showing that we have certain expertise that can be interesting for others*.

In other words, the employees see it as necessity for the leader to have good presentational skills since one of the main tasks is communicating and networking.

Many respondents acknowledged that the most important duty of the present leader is working with the employees and making people cooperate:

> *There have been some conflict leftovers from the previous years and right now she has to make people working in the Centre do a good job together, so they are able to do the projects they should do. I don't think it leaves any time for doing her own research or anything else*.

The employees have noticed that the leader is combining several tasks simultaneously and managing it quite well:

> *I think she's got the right kind of balance to be in that position, because she seems to have a lot of contact with the industry and outside of the APC which is always good, but at the same time she is a good scientific mind;*
>
> *As I have noticed, she is managing both things very well: being a researcher and also managing the group;*
>
> *I think, we are managing quite well academically, but we have a good connection to the industry too.*

The leader herself admits that she is definitely a researcher when it comes to recruitment and building relationships in the organisation, but at the same time she has a role to represent the APC to the rest of the world and that role is becoming more and more important for her. It is also important to motivate the personnel so that they stay in the organisation for longer and create so significant competitive advantage.

In general, the employees and researchers of the APC have admitted an important role of the leader. They agreed that the director is occupied mainly with the administrative tasks but still leaves some time for research and tutoring. It has been said several times that she mainly plays the role of a manager rather than a researcher, but stays truthful to the science. In addition, it has been noticed that she is rather a communicator to the outside organisations and industries than a representative of researchers' needs and opinions. Oddly enough this point of view has not been shared by the administrative staff from the department of animal science which is closely related to the APC. A respondent from the department was more sceptical although overall satisfied with the work of the leader. According to the respondent:

> *She's very good at research and her background is in the research. I think she wants to do as good as she can as a leader but she is more of a researcher than a leader, which is quite normal for people like that. She's thinking like a researcher. Well, that might work well but of course, especially in the situation they are going into now, perhaps the leader should possess more strong leadership potential.*

He added that in the research intensive organisations which work closely with the industry, there should be another kind of leader, more professional in management and organisation. He saw a slight problem in the fact that the majority of such Centres are steered by the professional researchers but not professional managers. However, he was positive that it could work out well in the future.

6.3 Culture

Organisational culture is a very complicated term and may include a variety of facts about the organisation from the vision and strategy to the relationships between the colleagues and motivational factors. The data presentation will start from the basic organisational characteristics and finish with the underlying factors and personal relationships.

Commitment to the organisational values and objectives

The vision of the organisation is to secure sustainable growth of the aquaculture by providing many-sided knowledge required for optimal use of proteins in feeds for fish. As it was noted by one of the respondents, all the sections have their own vision and aims though, since the research areas differ significantly. He also added that some of the researchers are united by their goal and vision and can see their research on a bigger scale of interconnectedness of the processes in the environment and sustainability of the special aquaculture field. He continues:

> *[...] but I don't think all of them are so concerned about why they are doing that, they are just doing it because they should.*

Some researchers seem individualistic in their work, they prefer to work in solitude and tend not to ask for any feedback because they are not sure if others would know better. A PhD student revealed that networking through the organisation took a lot of time and effort, and he preferred to do it by himself:

> *[...] even in such a research intensive organisation it is impossible to get good networks if you do not work hard yourself. So, I went to the USA on my own, found some colleagues there and will return there to do some experiments later.*

Such attitudes were especially prevailing in the section outside Ås. The FIP section appeared to be more unified by the common goals and more engaged in the work of each other.

As for the main tasks and responsibilities of the employees, they include research, writing and submitting applications, following-up of the applications, communication with the stakeholders, tutoring of PhD and master students, and teaching. The majority of the staff admitted that they are all responsible for achieving the objectives of the APC and they eagerly work on it. They are all engaged in high-quality research and submitting articles as well as supervising students. There has not been any disagreement with the rules and regulations of the organisation.

Concerning the dominant values of the organisation, almost all respondents mentioned "freedom". A researcher said that:

> *The work at the APC offers a high degree of freedom, we don't have many rules and regulations, the time schedule is flexible and I get to do what I really like", we get to do exciting research here and that is what matters*.

The APC leaves a lot of freedom of decision making to the employees and is undoubtedly appreciated. A respondent from the UMB has noticed that

> *[…] the researchers joined the Centre and they knew what it will be about, that they will have to work in the areas that the APC sets. So, that means that they cannot pursue their ideas the same way as if they were working at the university. But I don't think that there is any conflict*.

It is worthy of mention that although the strategic plan has set some limitations for the research activity, all the respondents underlined that they have all participated in the creation of the plan and could contribute into the final version of it. When asked about the freedom while working on the cooperative projects with industry, some respondents have acknowledged that industry is always eager to set some limitations on publishing the results, especially if they are unsatisfying for the commercial side. But in most cases the researchers demand the right to publish and make the knowledge available publicly.

The respondents were also asked about the motivational factors of working in the organisation, and many agreed that the salary is definitely not among them. However, they did not see it as a big problem. One of the researchers said:

> *I like the freedom here. It's not like I am selling stuff on the phone, trying to push some product. I have flexible hours.*

An engineer mentioned how important the working environment was and how motivating it was to see friendly people every day. A senior researcher has admitted that freedom of research and flexibility is what makes her work at the APC pleasant. So, it is mainly the freedom and interest in the field of research that inspire employees at the CoE. Nevertheless, a researcher from the GH section admitted that there is no reward system in the organisation. As researchers they have to find their own rewards: good journals that publish their results and peer-review. These are the main motivational factors, but they come mainly from the profession and discipline but not the organisation.

However, there are two ends of the stick, and the researchers eagerly spoke about the demotivational factors. A PhD student mentioned that the way the feedback worked contributed a lot to her learning experience but she wished for more reward. Another PhD student said that he is worried about instability of his future job as a researcher:

> *The problem is that 55% employees in this field do not have permanent positions but go from project to project. I want something more stable in the future*.

A researcher has supported these concerns:

> *We are not permanently employed here and no one knows what will happen when our status as the CoE will expire. We hope to get a status of SFI (Sentre for forskningsdrevet innovasjon, Centre for research-driven innovation) and engage in different projects but if we cannot do that, many will have to leave and that is a big problem. I am sure I will be able to find a job because I have a lot of experience but the others. I do not know. It will be difficult times.*

Another researcher said that it could be better if there was more encouragement in the organisation. She added that sometimes the leaders make unfair decisions and do not include people in the projects, which can also serve as a demotivational factor.

Concerning the relationships with the administration, the opinions did not diverge too much. The majority of administrative tasks are carried out by the section leaders who are primarily researchers. So, there is an absolute understanding between the leaders and other research staff. The administrative tasks are also carried out by the personnel at the department but they do not interfere in the internal affairs of the APC:

> *We are mainly helping them in the questions of how to spend the money for the projects in the best way. That is our role. We do not engage in anything else.*

An administrative consultant who is working at the APC directly said:

> *I do not care what they do there, I am only counting and sometimes pushing them to publish more, to invite more guest researchers and professors. I never read their projects or anything. Since I am the only non-researcher here, I sometimes feel that they treat me like a stranger.*

The same respondent admitted that she participates in the decision making process when it concerns funding or other things that researchers know little about. Otherwise, she does not interfere in their work. The researchers seemed to be very positive about the work of the administration and said that the consultant has been helping a lot with paper work. All the contacts and networking, however, are done by the leader of the APC.

It is worthy of mentioning that almost all respondents who are engaged in research do not associate themselves with this particular organisation. Some of them have only private reasons to stay there, others want to get enough experience and "make it look good on CV". As one PhD student pointed out:

> *I think that there are plenty of research groups doing the same thing. If there is some conflict or dilemma here, I will move on*.

The respondents showed loyalty mainly to the field or discipline they are working in, but not to the Centre itself.

In the end of the conversations the respondents were asked if they thought that the organisation had embedded the entrepreneurial culture. The researchers have all agreed that the organisation is open to the influences from the environment and has a good potential of attracting funding outside the RCN and the universities. Nevertheless, no one has thought of it as a pure entrepreneurial organisation with such a culture. They are much likely to be associated with a university than a commercial organisation. Their attitude towards commercial research has also proven this point. Moreover, according to the opinion of an administrative employee:

> *They (APC) have been more entrepreneurial in the beginning. When the Centre started to run, it changed, it became like a factory with the tasks that are all planned. It might change because they want to apply for the SFI status, we have to think new ideas, new projects.*

Contrary to the majority of points of view was the vision of the leader who believes that the "APC is in the forefront of the science, is very innovative, thinking new ideas and solutions".

Academic values

The freedom of learning, teaching and research has always been respected by academics all over the world. However, the modern utilitarian approach to the university and science has set some limitations to these values. In the APC the word "freedom" was used in both the context of organisational values and of personal academic values. Although the APC gives a lot of freedom and flexibility to the employees, their personal freedom of scientific enquiry is limited to a certain degree. Some respondents have acknowledged the plans and obligations to the Norwegian Research Council and other organisations take the majority of time. One researcher argued that:

> *I don't think we are free to choose whatever we want, because the workload is fairly high, we need to stay focused. There are always nice areas and it could be exciting to go back and look into them, but you are usually limited by time.*

Another young researcher said that limitations come not only from time but also from the resources. Additionally, the strategic plan sets some boundaries to the freedom. A respondent from the FIP section said:

> *I can pursue my interests as long as it is funded by the APC, but I can't do just everything I want. I have to find a consensus with the rest of the group.*

An administrative assistant working closely with the researchers mentioned:

> *Every time they are working on the project, they have to write it down in the special book, to mention which part of the research plan the research relates to. Of course, sometimes they do things that are not connected to the plan because it is either a lot of money or it's comparative or just in their interest.*

All the PhD students interviewed were satisfied with the degree of freedom while choosing the research area and theses themes.

Freedom of teaching is another aspect the respondents were asked about. Since it is a Centre of Excellence, the main duties are to perform high quality research and not to engage in teaching. However, the APC is tightly connected to the two HEIs and therefore, some personnel is devoted to teaching. In the past there were some researchers that were employed both by APC and one of the universities and therefore, there was much more teaching

embedded in the activities of the Centre. But they have all left and the situation has changed. Only one of the respondents was hired part-time at the APC and part-time at a university and therefore, had dual duties. Almost all interviewees admitted that teaching is an important part of being an academic. They said that being a part of the APC enables them to refuse from a big deal of teaching but they are still doing it. One of the researchers said that he started teaching while being a PhD student and still continues now:

> *Personally for me it was a good experience and a good way of learning how to present, because it's an important part of my role as a researcher. But of course, research is a priority now.*

An administration worker wishes the researchers had more time to devote to teaching, but the APC is "buying all the time" despite the fact "we are a part of the university". The leader also regrets that most of the time goes for research. She thinks that this way the researchers can lose a grip of students, but combining research and teaching can bring fruitful results. In addition, it is a good way to spot future PhD students and researchers. A respondent from the UMB seemed satisfied with the level of teaching which is done by the employees of the APC. He revealed:

> *Some of them have done quite a bit of teaching and they are hired by us to do it. It is not their responsibility or duty but they have been willing to do that. These people are very good; they have a high standard of qualifications regarding topics they are working with. They could say "No", but they like to do teaching*.

Only two respondents have admitted that they would prefer laboratory or other solitary work to teaching. They could still do some teaching but it is very far down on their priority list, while research is on top. All the respondents involved in teaching have a high degree of freedom when it concerns to designing their own lectures. They base them on their own research and, most importantly, actively interact with the students during the lectures and seminars.

Another distinctive characteristic of academic culture is the relationship between the students and researchers. As a CoE, the organisation does not have a right to educate PhD students and supervise Master degree theses. Therefore, the processes of selection and supervision are conducted with the assistance of the host university. It is another area where the Centre and the UMB have a close collaboration. After the selection the PhD students are hired at the APC

and conduct their research there. The PhD students interviewed were in general satisfied by the supervision. Some of them were indifferent and admitted:

> *[…] it is nothing more or less than I have been expecting"; "there is no difference between me working at the APC and my friends at the university. I have not noticed anything fancy here. But we get to choose our own topics and methods while it is all set at the university*.

Another PhD student revealed that the follow-up in the organisation is very good and she can probably get better assistance at the APC than if it would be at a university department. The researchers of the APC, who are the main supervisors and tutors both of PhD and Master students, acknowledge that the process of selection makes sure that only the best candidates get employed. One of the researchers acknowledged that with such a high competition for the places they can pick and choose the best candidates. The other respondent added:

> *We get quite a lot of applicants for the positions that we have and we like to choose the best ones. The problem is that a lot of them come from different countries and we cannot afford to have interviews with all of them*.

The FIP section of the Centre has introduced a practice of appointing a group of researchers to supervise one student; therefore "the students can be taken care of even if one of the supervisors is away". An administrator who works both with the APC and the UMB admitted that the PhD students at the APC have better supervision:

> *The students there have an advantage because they work directly inside the research field; they are feeling that they are members of a group in a better way than some of the PhD students at the department. On a bigger scale of results there should not be any difference, but if there is, it should be slightly better to be a PhD at the APC.*

Concerning Master degree students, the majority admitted that their final theses are more research oriented and based on vast experimental activity in the organisation.

The respondents were also asked about the evaluation process in the organisation and how it influences their main duty – to do research. It was important for the study to reveal how the pressures of accountability that emerge from the market ideology influence the core academic activities. Almost all of them agreed that writing reports and applications is stressful to some degree, but it is a very important part of their job. It allows them to achieve a higher status in science and be known among their international colleagues. The researchers admitted that publishing is the most important indicator of their effectiveness and status:

> *If you just teach and haven't published any article in 5 years – you are no one in the world of science*;
>
> *[…] in this field it is absolutely necessary to publish, otherwise you will never be known as a successful researcher*.

They have all agreed that peer-review journals and peer judgement remain the most important part of getting feedback on their work.

When asked about their opinions regarding the existing evaluation mechanism and how successful it coexists with the core academic values, many researchers revealed a concern. One of the PhD students argued:

> *Being judged by the number of articles and students? It is not the right way of doing it. How fair is it that articles are judged by the categories of quality? Who defines this? Of course, we need some kind of pressure, but it could be organised in other way. I feel that many will agree with me on that*.

A researcher at the APC echoed this opinion and added:

> *We are working in a pretty much applied science, so if we want people to read the article, we have to publish in agriculture field which is not a high index. In other fields researchers can get into a well-cited journal easier. So, it is difficult to compare different areas, there must be some other, more flexible mechanism*.

They have all admitted that they needed an evaluation mechanism that could help them to achieve better results but was not only judging the numbers, since it gives a one-sided impression of the science.

The respondents were confronted with the questions about the state of knowledge in the organisation and in society in general, how it is perceived and what role the basic research plays in their work. A lot of young researchers and supporting staff displayed their interest in the applied research. The opinions about science that must be applicable but not only for the sake of science and knowledge that can be used for the benefit of industry and society were shared by the majority of them. An administrative worker added a funding factor to it:

> *I think it is great that they have so many applied projects. That means that in the future they will have more partners, projects, and money to do the research.*

The more experienced researchers have admitted a vital role of the basic research and the necessity to be more academia-directed. One of the researchers mentioned:

> *There is a shift towards more commercialised research in this organisation. They want us to have more patents but I personally have doubts about it. We are a community of scholars and we will always be closer to the basic research*.

One researcher made an interesting remark:

> *Some of the reasons behind taking the industry experiments is that it gives you means to do some basic research. They are not interested in it, we are*.

An opinion that the basic and applied research creates a good synergy was also expressed very often in the answers of the respondents. In any case the respondents are all proud to stay true to the science and call themselves more "academia" than an entrepreneurial organisation, dealing with applied research. One of the researchers added that they are "a part of the university" which means that they "should live by the principles that exist there".

6.4 External Links

The first set of questions under this category concerned the degree of the state influence. Since the Norwegian Research Council provides the basic funding for the APC, the organisation should be accountable to the RCN to a certain extent. The accountability tools according to the employees of the APC include yearly reports and a midway evaluation. The majority of researchers mentioned that the evaluations by the RCN are not that strict. One of the researchers admitted that they have all participated in writing the research plan for the Norwegian Research Council, and they have to deliver it now. Another one mentioned:

> *The RCN is not as demanding and bureaucratic as other organisations. I can't say that we are somehow influenced by their agenda either*.

However, many of them remembered that the midway evaluation report (after 5 years of the existence of the Centre) was a sufficiently hard job and they struggled to get it done in time. As for the influence in terms of goals and prioritizing some projects over the others, the RCN does not influence the organisation directly. The main role of the council after funding is to evaluate the work of the CoEs and give some advice on future development, while all the major decisions are made within the Centres.

Service to the community was not among the priorities of the interviewed staff. They all mentioned how their excellent research in the field of farming fish, which has grown significantly, will bring positive results for society in general i.e. they mainly concentrated on the issue of dissemination of knowledge in society. The leader of the organisation also

acknowledged that some researchers engaged in the work of the variety of committees. The administration consultant said that the links with society will perhaps be stronger once the organisation starts to apply for the SFI status. She said:

> *We are not directly connected with society. The SFI is more applied; it answers the needs of society and industry. If we get this status, we shall probably develop the link.*

Some researchers considered the education of Master and PhD students as part of the accountability to society, but the majority do not think this way. The opinion that the students are future researchers and members of the community was more spread than the previous one.

As for the links to the organisations outside the APC, many have noticed that lately the commercial research has been prioritised. The APC has a considerable number of industrial partners and this number is growing. The administrative staff seemed to be delighted by this state of affairs:

> *It is great that they have so many links to the industrial organisations. It means that when the CoE status expires, there will be something to do. They will still get projects and will be able to continue some activity*.

The leader has also shown a strong direction towards the applied research and the importance of networking, especially with the industry:

> *It is good to know that we are wanted. It is one of my duties to go outside and suggest our expertise. So far it has been successful*.

When directly confronted with the question about the external links, only a small number of respondents mentioned academic organisations. One researcher admitted:

> *We have a very good research base here, basically we do not need to go outside and do our experiments. But we do, academic collaboration is very important. We can see things differently, for a new perspective. We appreciate it a lot*.

A number of PhD students interviewed have themselves been to different types of exchange programmes between the universities and conducted experiments in other countries. They have all confessed that it was very important for them to see the difference, to see and compare:

> *This field is very developed in Norway and we do not have much to learn from others, but there is always something.*

The APC mainly collaborates with the organisations within the field of the fish industry and is not directly involved in any other projects. An important part of international collaboration is the participation in international conferences and publications in the peer-reviewed journals. One of the respondents mentioned that it is the “only valuable” source of feedback that you can get in such organisations like the APC.

So, while the CoE values academic advice and expertise from other universities, there has been noticed that the priority has shifted. However, many researchers have admitted that even in the commercial projects they try to push more on the side of the basic research. As it was mentioned above, the industrial projects can also be a good source of funding for the basic experiments.

7 Data Analysis

7.1 Organisational Structure

According to the empirical findings, the organisational structure of the APC represents a mixture of characteristics from both theoretical models. The following subcategories will carefully display this feature.

Internal integration

The data acquired during the interviews and document analysis revealed the flat structure of the organisation, where the activities are mainly project-based. These are characteristics of the **market-based model** where self-organisation and minimum hierarchy are supposed to lead to better efficiency and productivity. Moreover, the staff of the organisation are hired on short-term contracts. This feature enables a modern entrepreneurial organisation to have a clear focus of its employees since the project is their primary responsibility, and have a clear authority line. However, in an academic organisation like APC, it might cause several drawbacks. The long traditions of the tenure academic profession have resulted in situations where the academics and researchers in modern project-based organisations do not feel the security sacred to the profession. According to the empirical findings, this concern can also be found at the APC. In addition, the CoE project lasts only ten years and it is unclear where everyone will be reassigned when it is completed. It also proved to cause certain problems within teams.

The organisation has also displayed characteristics of the **traditional model**. It was clearly seen that the APC emphasizes collegiality and consensus in many of its daily activities. The hierarchy between the professors does not exist and everyone in the organisation enjoys the same status. In addition, the three different sections of the CoE are cooperating on the disciplinary basis. There exists almost no competition for basic resources between them due to the decision of the leader to divide the basic funding equally, no matter what the results and indicators of each section are. The organisation under study has also proven to have a narrow administrative apparatus while academics and researchers themselves take up the majority of administrative tasks. It clearly refers to the Humboldtian idea of organising research and teaching in the HEIs.

Characteristics that can be referred to both theoretical frameworks

While in the traditional European model the absence of hierarchy means the equality and prestigious status of the academic profession (Bleiklie, 1998), the NPM paradigm uses it as a tool for higher efficiency and for providing a favourable working environment. In the organisation under study the hierarchy is almost non-existent and proves to be based on the objectives of the both theoretical models. While the employees of the organisation have equal status, it also makes it easier for them to communicate more efficiently concerning the working questions and methods.

Structural link to the department

The empirical information has shown that the CoE under study has weak links to the department. The structural organisation ensures that the CoE is directly linked to the rectors of the universities while the department is omitted. However, links based on teaching and outsourcing are still found within the organisation. While the modern NPM-based model suggests that the interdisciplinary links should prevail in the new European university and that networks held by the myriad of social, moral, and occupational ties are the basis of such a structure (Meyer, 2002), the APC remains a detached organisation on the university scale. There is a certain interest from the department side to be more involved in the affairs of the CoE but the workload and the way the projects are organised leaves the Centre little time for networking inside the organisation. Moreover, the Centre has a very distinctive disciplinary background and a very wide experimental base. Due to this fact, they barely collaborate with the department and are more or less self-sufficient. However, the employees of the APC have proved to seek better connections with the department and are eagerly involved into some social and teaching activities. Therefore, while the structure does not stipulate that the Centre takes part in the university affairs, there has been noticed certain activity and networking. Based on the information, it is hard to attribute the organisation to one of the above mentioned models. We can see, however, that the employees of the CoE under study show certain entrepreneurial behaviour when it comes to collaboration with the department.

7.2 Leadership

Decision making and authority

The structure of the leadership of the APC has clear features of the modern entrepreneurial model. The organisation has a Board that overlooks the activities and an appointed leader. However, the Board does not consist of the external stakeholders as could be expected in the model. The analysis of the decision making power in the organisation has drawn the conclusion that the organisation is much closer to the traditional model. The members of the Board are academics and researchers that possess a vast professional academic experience. Therefore, it is expected that they will make decisions beneficial to the organisation and its internal rules. Moreover, the Board only decides the most important questions, leaving a lot of freedom and flexibility to the members of the organisation.

The decision making on the organisational level can also be attributed to the traditional model. The model suggests that the leader does not exercise much authority and the decision making is based on negotiation, persuasion, and the final consensus (Middlehurst, 1995). The organisation under study has clearly revealed such an approach to the majority of the questions. Collegiality was one of the basic features of the organisation and was mentioned by the majority of the respondents. Moreover, while the organisation sometimes allows the external actors to participate in discussions, the values and rules of the APC still play a decisive role in these discussions and negotiations. The participation of the administrative staff in the decision making procedures is limited and often concerns the questions that the researchers consider to be secondary. This feature matches the view on the administration that the traditional model suggests.

The leader of the APC has an extensive academic background and her authority is mainly based on the professional credibility. The data obtained during the interviews suggests that the group has ceded some autonomy in exchange for the organisational framework where the professional freedom can be maintained. The members of the organisation were completely satisfied with the leadership and they mainly attributed it to the fact that she was “one of them”, while the administration was “a stranger”. That suggests that the professional leadership inherent to the modern university model would not succeed in the APC since the professional culture seems to be the most important factor in building the successful

relationship with the leader. Furthermore, such a relationship with the leader ensures trust and certain ease when the collegial decision making is concerned.

Main duties and role of the leader

The leader of the APC seems to be involved in a wide number of activities. That proves the argument of Bleiklie (1993), who suggested that the leader of an entrepreneurial academic unit should balance several roles: the civil servant, the academic authority, the academic coordinator, and the manager. According to the data obtained, the leader of the organisation is not only responsible for negotiating and lobbying the interests and needs of the group, which attributes to the traditional model. But the leader is also involved in networking and seeking the resources required to secure the financial stability of the Centre. Moreover, she is involved in the discussion of many managerial issues that arise on a day-to-day basis. The leader of the organisation is also engaged in selection, appraisal, and development of staff, while still doing research and training PhD students. So, the data suggests that although the leader of the organisation has a research and not a professional administrative background, she copes with the entrepreneurial duties quite successfully. It was absolutely recognised by the leader that the APC has to function in an unstable complex environment where the science acquires more applied characteristics and where the role of the leadership becomes many-sided and crucial for the activities. It goes in line with what was described as an entrepreneurial type of leadership in the theoretical framework.

Characteristics that can be referred to both theoretical frameworks

As was stated above, the leader is involved in a variety of activities. Obviously, with such a workload comes a question about delegation of responsibilities in the organisation. According to the empirical data, the leader eagerly passes down tasks and leaves certain freedom to the employees in fulfilling them. That feature has certain similarities with the traditional model where the authority was delegated on short appointments and easy recall to the academics on the appropriate level. The system is less bureaucratised nowadays but the main idea remains the same. NPM also emphasises decentralization and delegation of responsibility as a way of making an organisation function more efficiently. However, in this model, the tasks are usually delegated to the widened administration apparatus while in the organisation under study such delegation is to the researchers and academic colleagues. So, while this feature

attributes to both models, it is possible to conclude that the way it is being done at the APC echoes the traditional model more than the entrepreneurial one.

7.3 Culture

Commitment to the organisational values and objectives

The APC is a comparatively young organisation and has not developed many traditions and symbols dear to the members of the organisation. However, there are some signs of loyalty expressed by the members of the organisation. The majority of the respondents, eight, have a deep faith in the mission and values of the organisation. They are fully aware of the contents of the vision of the organisation and claim that they work hard on implementing it. However, the empirical data shows that the feeling of union is more obvious in one of the sections of the APC while the others seem to be more estranged, having their own missions and goals. There has not been any distinctive organisational saga found at the unit of analysis and a number of employees were new to the organisation. Many of the respondents were found to associate themselves with a university organisation more than with the CoE. So, while they are working in a research-intensive unit collaborating with the industries, their loyalty still belongs to the higher education sector and the values that they have there.

Bearing in mind that the APC was created partly to answer the needs of the community, it was obvious from the interviews that many employees shared a utilitarian view on the science and research activity in the organisation. It was interesting though that such a view is only based on the fact that the organisation is involved in research with the industrial organisations. Any other indicators of entrepreneurial or learning organisation (such as permanent innovation, fast reaction to environmental changes, or learning from other organisations) were never mentioned during the conversations. Moreover, feedback was also rarely mentioned in a learning context, although it is a vital part of the learning behaviour. This means that while the academics realise the importance of applied research, which can serve society, they are still not sure how it can be organised in practice and which models from the industrial and business world can fit best in a setting like the APC. It can be explained by the certain values and beliefs that the academic profession creates since the majority of the employees have worked long in academia and adopted certain behaviour from that environment.

Freedom was named as one of the most rewarding features of the organisation. Although the researchers have certain restrictions, the freedom of research and knowledge are highly

respected at the APC. This goes in line with the traditional model which was discussed in the theoretical chapter. Moreover, the employees found working at the APC much less stressful than it would be at the university. In the Centre they have the possibility to engage in the projects they like, refuse from a certain amount of teaching, and work in the area of their interest. This feature certainly fits the three freedoms of Humboldt and his vision of science.

The existence of the entrepreneurial culture was also questioned during the interviews, and the results show that the employees of the APC as well as the administration are reluctant to acknowledge that the Centre is genuinely entrepreneurial. The document analysis data showed the aspiration of the CoE to be more market-oriented by establishing a patent system, reveal more innovative characteristics, and be closer to the needs of society. However, according to the majority of personal opinions on this topic, the Centre is far from being commercialized. It is mainly the science which matters and academics value that much higher than any patents or entrepreneurial activity, although they have to take up projects interesting for the industry.

Summing up, the organisation has values and norms that are shared by the majority of the employees, although it is not obvious to all of them how these goals must be implemented. Moreover, on the surface they share the utilitarian view on science. However, it is not completely clear to the employees how the entrepreneurial culture is to be developed. The data also showed that the employees are much more loyal to the discipline than the organisation itself, and that they consider the Centre to be more an academic unit than a commercialized enterprise. Consequently, it is not clear which model these features can be referred to. The organisational culture represents a mixture of the classical academic views and entrepreneurial approach to the activities of the Centre. It can be explained by the settled academic values and ideas that create a certain barrier when it comes to implementing new managerial ideas.

Academic values

The interview data shows that the academics working at the APC value academic freedom and autonomy and consider them to be the basis of their profession. The data reveals that the researchers always insist on knowledge being available and open, publishing all the results of their research in the respected peer-review journals. It can be interpreted as a feature of universality of knowledge leading to an obligatory unification of all knowledge and interdisciplinarity, which is typical for the traditional European academic culture (Braga Da

Cruz, 2006). Despite the fact that the RCN dictates certain conditions on how the outcomes should be evaluated, it leaves the Centre a lot of freedom. The employees did not express any conflicts arising from the differences between their own values and the results expected by the RCN. They highly appreciate the amount of autonomy and considered it to be one of the most important features of their work. That goes in line with the traditional Humboldtian values that were discussed in the theoretical chapter.

The traditional European university emphasizes teaching and research that go in parallel. Moreover, it is very important that a student gets both a cultural and a scientific upbringing and will be ready to become an academic himself. The behaviour that was observed at the APC matches this requirement. The students at the APC are considered to be colleagues to the academics. Additionally, the Centre exercises a policy when graduated well-qualified PhD students are employed by the Centre and engage in their own research. It resembles the traditional Humboldtian way of treating the students. In the APC the Master and PhD students are never treated as clients, they are primarily learning to be future academics themselves. The researchers successfully combine research activities with for-profit intents, training, and experimental research, which can serve as a sign of embedding academic capitalism in everyday practices. But at the same time, while there are certain market constraints, the academics try to unite them with their traditional activities and basic research.

The data also identified the commitment of the research personnel to teaching, which is an integral part of the traditional university model. With the market pressures and emphasis on productivity that is mainly reflected in the number of published articles for this field, researchers pay less attention to the teaching component of their profession (Santiago, Carvalho & Relva, 2008). This is not the case for the organisation under study. Despite the fact that employees do not have any teaching obligations, they willingly do it and consider it an important part of their career. There has been noticed an agreement about the significance of teaching although research is still considered the primary task.

The nature of knowledge is strongly influenced by the entrepreneurial values; the whole criteria for evaluation of knowledge have been shifted to the market, where efficiency and productivity are valued (Santiago, Carvalho & Relva, 2008). Supposedly, the evaluation mechanisms must have affected the way the knowledge is produced and the basic operations of the academics. The data revealed that there is a slight change in these operations in the sense that there are bigger amounts of paper-work. However, that change does not conflict

with the existing values of academics. They find it important to maintain and improve the level of knowledge in the organisation. Writing applications is considered to be a significant part of the research work and is highly appreciated by the employees. Nevertheless, some were concerned with the evaluation mechanisms that do not necessarily include quality-evaluation in their opinion. In short, the researchers feel the need to be evaluated but they do not always trust the quantitative methods used. The peer-review evaluation in the journals and at the conferences seems to be a traditional well-trusted way of qualitative evaluation that the majority of the organizational members praised. So, while new methods can be established by the state and other actors, the academics still adhere to the traditional ways of evaluation.

The views on the state of knowledge have shown that the majority have adopted positive views on the applied research. Such value as "knowledge for its own sake" is basically non-existent in the Centre. The employees pay a lot of attention to the applicability of knowledge. However, basic research is also a big part of the organisational development. The employees can successfully unite these two tasks and often use the resources from the industrial projects in order to conduct basic research. Such behaviour can be characterized as academic capitalism, which has been developing in researchers ever since the university started to experience financial constraints.

Obviously, the picture drawn from the empirical data does not fully represent either of the models. It is a mixture of both. While the academics adopt entrepreneurial strategies, their underlying reasons are still tightly connected with the traditional values of academia. Besides, the direction to the applicability of research can be explained by the specifics of the field the APC is working.

7.4 External Links

The traditional model suggests that the academic organisation should not be influenced by the state in any way and should possess a vast degree of autonomy. However, contrary to this notion the organisation under study not only gets the resources from the Research Council of Norway but is also accountable to it. Firstly, it is the RCN that dictates how quality and productivity should be evaluated in the APC. Therefore, the organisation must follow the rules and obligations connected to this area. One of the examples is the priority of publications. If in the beginning of the CoE programme the organisation under study had to prioritise scientific peer-review journals, now the regulations have changed. At the moment the APC should publish a certain number of articles in the popular science magazines. Certainly, the

researchers can still publish in other sources but the main priority is to follow the guidelines of the RCN. So, as in many other European countries, the utilitarian view on the science is being communicated from the state level policies to the organisations like the APC. Although it causes some concerns of the employees, they seem to adhere to their formal roles and fulfil the obligations before the state. However, it is worthy of mentioning that the RCN does not interfere in the internal affairs of the organisation and it is the researchers themselves who created a project-plan. So, while the APC experiences certain limitations caused by the accountability issue, they can still engage in the projects that they themselves initiated with flexibility and freedom.

As for the service to the community, dissemination of knowledge was named as the main way of doing so. The Centre is involved in the research that is very significant for Norway as a country where the fish-farming industry has been growing fast. They do not have any clear goals to be a centre of regional or local significance, the researchers rarely participate in the community matters and the Centre is more occupied with internal ongoing activities.

Finally, the number of organisations that the APC is collaborating with is growing considerably year after year. In the beginning of functioning as a CoE the Centre mainly had academic partners and partner organisations, but now it has developed a big network of industrial partners. There has been noticed a rather slow activity with the academic partners because the Centre has a sufficient equipment base, however, it still takes place at the APC. Considering the fact that the Centre will have to become independent in 4 years, the leadership and employees emphasize the commercial activity. It is the financial resources they can earn today that will be needed after the CoE project finishes. It can explain the high activity of the APC in attracting industrial partners and concentrating on commercial organisations rather than academic ones when it comes to partnerships.

Based on the data gathered and the analysis, it is possible to update table 3.1 by adding the original characteristics of the Aquaculture Protein Centre. The table 7.1 described the features of the APC according to the models and can be found on the following page.

Table 7.1 Features of the APC according to the theoretical models

APC features	**Models**	
	Traditional	*Modern Market-oriented*
Structure		
1)Internal integration -	Cooperation on the disciplinary basis, no competition between the groups for the basic budget; narrow administrative apparatus	Self organisation, project-based work, the importance of team work; short-term contracts; certain degree of competition for the independent projects.
2) Structural link to the department	Weak links to other departments; the disciplinary basis of the cooperation outside the organisation.	Search for better connection to the department; collaborative behaviour.
Common features	A very low degree of hierarchy	
Leadership		
1)Decision making & authority	Decisions are made by consensus, low degree of influence from external stakeholders and administrative staff.	The Board decides the most important questions; appointed leader.
2) Main duties & role of the leader	Having a vast academic background the leader can be seen as a representative of the needs of other academic staff.	Leadership responsible for planning, resource distribution, staff management, marketing and communicating initiative. Leader as a link to the outside groups.
Common features	Active delegation of responsibilities	
Culture		
1) Organisational values and objectives	Dominant value – freedom. The organisation provides freedom and flexibility; low loyalty to the organisation	Utilitarian view on the knowledge production; developing feedback loops; signs of entrepreneurism; wide use of applications and reports.
2) Academic values	Individuals are superior to the organisation; union of teaching and research, universality of science, students as future academics; concern with the quality of knowledge; value of peer-review as the only legitimate source of evaluation	Self-evaluation, a wide use of performance indicators lead to changing views on science; applied knowledge prevails
External Links	Developed links to the academic organisations concerning basic research and knowledge exchange.	Accountable to the state, industrial partners; a very developed base of links with industry; collaboration takes place through contracts.

8 Discussion and Conclusion

A major goal of the present study was to describe and understand the processes and objectives of a comparatively new university setting – the Centre of Excellence. In order to reach the goal the following problem was posed:

"How can emerging centres of excellence be interpreted and understood within the European university?"

The guiding questions were formulated as follows:

1. *What are the relevant frameworks for understanding the establishment of centres of excellence?*
2. *What main features do the social and academic organization and leadership of centres of excellence have?*
3. *Do centres of excellence represent new ways of organizing academic activities within the university?*

Concerning the first question, the two frameworks – the traditional European university model and the market-based, entrepreneurial, or learning university model, have been used. They allowed for a systematic analytical tool to be developed and were of a great value while making sense of the empirical data collected for the study.

Following the theoretical framework, four main features to be analysed emerged. They were: organizational structure, leadership, organizational culture and external links. The data analysis that was presented in the previous chapter revealed interesting patterns of the academic organization of the Aquaculture Protein Centre. In our attempt to analyse the first of the dimensions we came to the conclusion that it indicates the characteristics of both theoretical frameworks. The Centre has obviously been set up as one of the progressive innovative units that emphasises efficiency and productivity through ad-hoc project-based teams. Moreover, the employees of the APC show loyalty to the department are eager to communicate, and solve problems openly, which is an important characteristic of a learning organisation. In addition, the short-term contracts raise slight concerns in the academics for whom tenure positions have always been a way to secure their status and be associated with a particular university organisation

At the same time the processes that are taking place within the organization such as disciplinary-based collaboration, no hierarchy, and open collegiality refer to the classical European university model. It is fair to state though that the aforementioned features are characteristically typical for Norwegian society in general and therefore, the organisation under study can be a reflection of these values. However, they seem to work in the organisation and unite the research personnel in the professional level the way the classical model presupposes.

The second area that was examined is leadership. The decision making process is mainly a question of collegiality and consensus which takes us to the traditional model. However, the leader showed rather entrepreneurial behaviour and was considered to be mainly a communicator with external stakeholders. The leader also desires more authority in decision making, which proves the organisation is shifting away from the collegial model. In addition, the views of the administration on the work of the APC revealed that they wish for more commercially aggressive behaviour and closer relationships with the administrative staff because they "know better how to manage research than the researchers themselves". So, while the characteristics of the traditional university are still prevailing, there is a noticeable desire to move away from them and become more innovative, entrepreneurial, and fast-reacting. Such a shift can be explained by the nature of the CoE project which lasts ten years. It means that the organisation has to acquire as many networks as possible today, while they have a status, so that in the future they can survive without the financial support from RCN. It proves that the organisation is proactive and tries to influence its future environment by taking steps now. That would be unthinkable in the classical model where universities have mimetic behaviour and behave rather reactively.

Culture was the feature that required more analysis of underlying categories than the others since it is a very complex matter in organisation. On the organisational level the norms and values are barely reminiscent of the entrepreneurial model. However, some routines that have been embedded in the organisational functioning such as application and report writing, and regular self-evaluation, amongst others, have definitely come with the NPM paradigm. These activities are highly valued in the organisation and have become a part of everyday activities. The researchers themselves act rather entrepreneurial when searching for resources for their projects or working with industry. However, in these activities they always find elements that can contribute to the basic science that they value highly. They are mainly motivated by

freedom which fits the traditional framework. In addition, the section which did not participate in the study and which is engaged in more basic research was considered to be less entrepreneurial and less successful in attracting external resources. While it can be attributed to the personal characteristics of the employees of the section, we should not forget that basic research in general is not able to generate much income.

As for the personal academic values, the data confirmed shifting from the traditional to more entrepreneurial beliefs. Many have expressed the utilitarian view on the science which corresponds with the changes in the outside environment. That indicates the flexibility of the organisation and an element of learning behaviour inherent to modern research organisations. However, regardless of entrepreneurial strategies aimed at generating income, the data revealed the fact that academics and researchers also partly conform to the roles that their profession and discipline dictates. The evaluation mechanisms based on quantitative indicators also raised some concern among the researchers. Although they do not approve of them personally as academics, they still follow them as it is the main mechanism for acquiring funding as well. So, it seems that the organisation conforms to the rules and goals of the market that are imposed on it by the institutional environment. At the same time the data reveals that the free spirit of academic culture which has been discussed in the traditional European model is still alive. The employees answer to the needs of the environment but such values as freedom, quality of research, disinterestedness, and commitment to teaching through research still guide all their activities. In other words, the certain level of resistance of academic culture vis-à-vis new modes of knowledge production has been observed. However, it was expected that the academic culture would be less influenced by the market approach to science than it really was. That fact can be explained by the applied nature of the field that the APC is working in.

Regarding the last feature, the external links, there has not been revealed any deviation from the overall pattern. The Centre is sufficiently autonomous when it comes to its internal affairs. The RCN which is a basic funding actor expects annual reports and a certain degree of accountability. This accountability cannot be described as very demanding and bureaucratised, and the members of the APC agree that there is a lot of freedom. The community does not participate in the organisational matters either. As for the partners, the number of industrial organisations in the list is much bigger than the number of academic organisations. Once again, it can be explained by the necessity to fund the organisation after

the CoE status has expired, and commercial research is seen as a good way to ensure sufficient financial resources in the future.

In general the Centre represents an organisation that possesses unique character. While it is quite entrepreneurial at first glance, the internal processes and characteristics show many elements of the traditional European model. The study shows that the academic culture is the feature most resistant to change and even when the researchers conform to the rules and norms that are set outside, they find ways to preserve the culture so dear to them.

Certain conclusions regarding the third research question can be drawn based on the data analysis. Firstly, the CoE under study represents an academic organisation that has a number of entrepreneurial features. Since its main activity is research, the academics do not have to spend much time on teaching. That allows them to engage in research activities, i.e. what they highly appreciate. Despite the project-based work and certain limitations set by the environment, the researchers get a degree of freedom of research and autonomy, which is not characteristic for a modern university influenced by the state agenda and pressures of accountability. Further, the CoE status gives the researchers an opportunity to get involved in funded basic research which lasts for a long period of time (ten years). It enables academics to engage deeply in one area of research while at a university department it would not be possible since projects on average are much shorter in time. Concerning thesis supervision, the CoE is much closer to Humboldtian ideal than the modern NPM affected university, where a student is just a client. So, while the APC can be described as a completely new setting inspired by the idea of entrepreneurial university and created to attract resources for universities, its features can be related to the well-tested and well-preserved traditional model as well.

The NPM ideology promoted in all the reform plans at both national and European levels has certainly influenced and continues to influence the HE sector in Europe. Despite all the attempts of the traditional European university to stay true to its tradition, it cannot just close its eyes to all the developing processes regarding the number of students, accountability, and knowledge-based economy, where HEIs are called to play a very significant role. This study may suggest that the CoE is a tool with which the entrepreneurial idea of the university is slowly winning over traditional academic values. While certain traditional features were observed at the CoE, the Centre is shifting away from them to discover the horizons of commercial research, applied science, and innovative behaviour.

Suggestions for future research

This work has been designed as a single case descriptive and exploratory study of one of the Norwegian Centres of Excellence. As was mentioned in the methodology chapter, while the results of such a study cannot be generalised, they can present a glimpse of the internal processes in the organisation. Therefore, it could be interesting to present a multiple-case analysis of a situation with the Centres of Excellence.

Secondly, the Aquaculture Protein Centre is engaged in a more applied research, which might be the reason of the observed entrepreneurial behaviour. In order to form a more complete picture of the character of the CoEs further insights into the more basic research oriented Centres is needed. This area could be examined both at the national and European levels.

Further, the contribution of the CoEs to the development of the region in which they are located could be discussed. Certainly, they contribute not only economically, but also culturally and socially and this link could be thoroughly studied.

In addition, the present work focused mainly on the internal processes of the Centres of Excellence, omitting their role in the development of the HE sector in general. The links between the HEIs and Centres of Excellence that they are hosting can be examined and analysed and the findings can complement the findings of this research project.

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Appendix A

Interview Guide

1. **Presentation of the researcher, brief background of the study**
2. **Information on the respondent**
   - ✓ Position
   - ✓ Department
   - ✓ Age
   - ✓ How long have been working at the Centre
   - ✓ Full-time/part-time
3. **Organisational structure**
   - ✓ The process of decision making
   - ✓ How are the decisions about strategic plans made?
   - ✓ What stuff does it involve?
   - ✓ Are new ideas being listened to and heard?
   - ✓ Competition between the departments
   - ✓ Participation of administration in decision making
   - ✓ Centralized/Decentralized
   - ✓ Communication of decisions
   - ✓ Role of the administration in daily activities
   - ✓ Self-organisation/Formal organisation
   - ✓ Hierarchy
   - ✓ Feedback loops in the organisation
   - ✓ Organisation of research and teaching
4. **Leadership**
   - ✓ Description of leadership
   - ✓ Leader as a representative/communicator
   - ✓ The basis for authority
   - ✓ Communication with a leader
   - ✓ Understanding of the primary duties of a leader
   - ✓ Fair/Efficient leadership
5. **Culture**
   - ✓ Involvement in research nationally and internationally

- ✓ Freedom to conduct research in any area of interest
- ✓ Involvement in serving the community
- ✓ Evaluation process
- ✓ Academic incentives
- ✓ Rewards and motivation
- ✓ Academic identity and respect for the profession
- ✓ Relationship between academics and administration
- ✓ Involvement of academics in administrative work and key decision making
- ✓ Attitude towards students
- ✓ Involvement in the designing of study and academic programs
- ✓ Entrepreneurial signs
- ✓ Attitudes to knowledge/science/knowledge production

6. External links

- ✓ Community work
- ✓ State connection/influence
- ✓ Involvement in international research groups
- ✓ Partnership with industry
- ✓ Involvement in commercial research

7. Additional comments and opinions

- ✓ Difference between the organisation in a university and the CoE
- ✓ Level of entrepreneurialism in the organisation